



Operation Manual

Electric Counterbalance Weight Forklift CPD series


Anhui Yufeng Equipment Co.,Ltd.

The counterweight forklift is widely used in ports, stations, airports, freight yards, factory workshops, warehouses, circulation centers and distribution centers. It is an essential equipment in pallet transportation and container transportation to load, unload and carry pallet goods in the cabin, carriage and container. Forklift plays a very important role in the logistics system of an enterprise, and it is the main force in the material handling equipment. Widely used in stations, ports, airports, factories, warehouses and other sectors of the national economy.

The CPD battery balanced forklift produced by our company can be divided into 1.5T, 2.0T, 2.5t and 3.0T forklifts according to the load. The forklift's electrical system is a 48V full / half AC system, with a maximum running speed of 12km / h. It is equipped with Curtis walking controller and pump controller, instrument display direction switch, battery power and vehicle use time, etc.

The forklift's electrical system is a 48V full AC system with a maximum operating speed of 12km / h, equipped with SME electronic control and instruments, which display the operating speed, service time and battery power. Press the E / S / h key on the instrument for a long time to switch between low, medium and high speed modes, and press the tortoise key for a long time to switch to tortoise speed mode.

Thank you for purchasing EFORK product

 In case of vehicle transfer, please hand this book to the new owner together with forklift.

Obligations of EFORK agent

When the new car is delivered to the customer, it shall take the initiative to explain the relevant maintenance procedures to the customer and fully explain the importance of regular maintenance of the vehicle. After regular maintenance, fill in the regular maintenance record as required.

Owner responsibility

1. When the vehicle works for about 50 hours, please take the relevant purchase information to Yufeng agent for free compulsory maintenance;
2. Please keep the relevant maintenance records properly, because in some cases you must show these records to prove that necessary maintenance has been carried out;
3. Do not make any changes to the vehicle. Any change made to the vehicle by oneself may affect its mechanical performance, safety performance or working life, or even violate the regulations of local government.

Free compulsory maintenance

In order to keep your car in good condition and extend its service life, please go to Yufeng agent for maintenance in time. The first maintenance must take about 50 hours to use, and take relevant materials to Yufeng agent for maintenance.

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
1.About safety

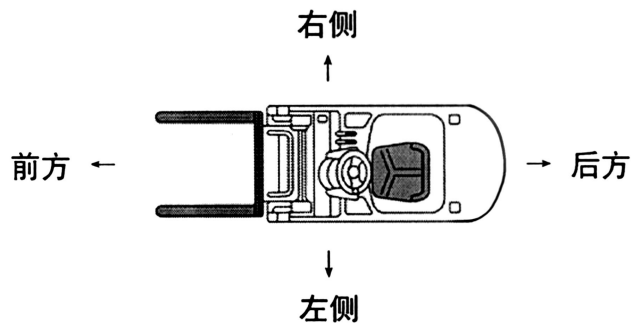
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In this book, there are the following precautions.

In order to protect the safety of the owner and operator of the vehicle, please strictly observe the implementation. Operation, spot check and maintenance shall not be carried out unless the vehicle is well known.

All terms and symbols used in this book and on the vehicle nameplate have the following meanings:

Symbol indicating the degree of danger	The consciousness of symbols
 Danger	A symbol indicating that it is very easy to cause death and injury accidents and must be observed
 Warning	Indicates a symbol that can lead to the occurrence of a fatal accident and must be observed.
 Attention	A symbol that must be observed in order to cause death, injury, damage to the vehicle and surrounding objects.
 Note	A symbol that has nothing to do with accidents and faults, but is expected to be familiar in order to extend the service life of vehicles.



The representations of "front", "rear", "right" and "left" used in this book are shown in the figure above.

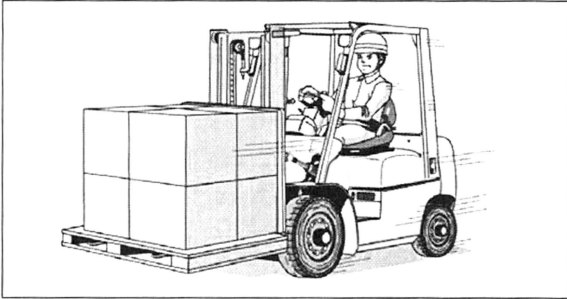
Instructions for use

In order to use the forklift safely and efficiently, EFORK has redesigned and manufactured many times to improve the forklift. The accidents are usually caused by the mistakes of using methods. The occurrence of the accident is not only because of "misoperation", but also because of other reasons, such as the wrong selection of the model, the improper selection of the equipment or the use environment, the selection and education of the operator, and the lack of the training level.

This chapter mainly introduces some matters that must be considered as management personnel in order to prevent all accidents.

- From page 2 to 13, it summarizes all kinds of precautions that must be observed by the management personnel of forklift operation and operation. Please read it, too.
- The content after page 14 mainly refers to some matters that must be paid attention to by drivers who are directly engaged in operation.

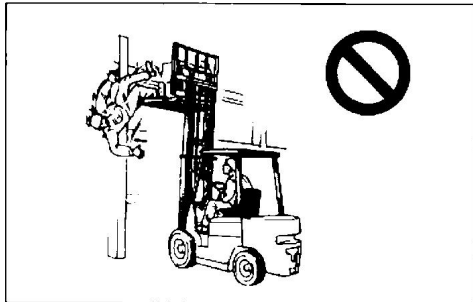
■ Main use of forklift



The main purpose of forklift is to carry goods placed on pallets and stack them at a certain height.

In addition, after the forklift is equipped with appropriate accessories, it can also be used to carry and stack the goods that are not placed on the pallet.

■ Do not use outside of use



Use beyond the purpose refers to driving after carrying people, lifting people very high or towing other vehicles, etc. The methods of use prohibited in this book are absolutely not and are not allowed to be used.

(example of use outside of use)

- people standing on forks and pallets, lifting.
- people stand on pallets to hold down goods
- directly hang the steel wire rope on the fork to lift the goods.

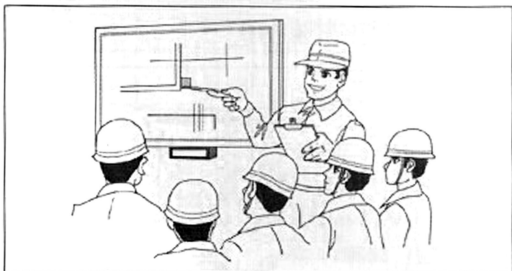
- traction of other vehicles.
- use forks to push goods or other vehicles.
- use forks to open and close the doors of other wagons, etc.



Warning

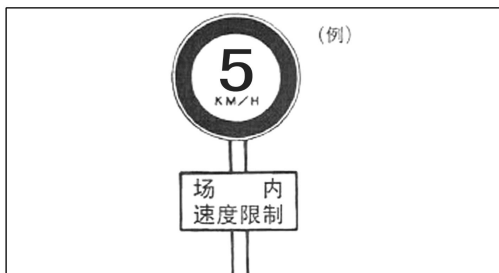
The driving road surface of the vehicle shall be flat and solid; when there are steep slopes, long slopes, sharp turns, narrow roads, deep ditches and other special road conditions in the driving route, protection facilities, warning signs and speed limit reminders shall be set.

Work out the operation plan and discuss fully



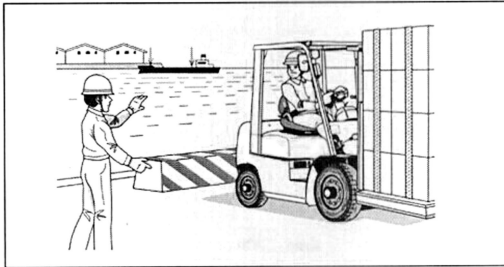
Before operation, determine the route and operation method of forklift, and discuss safety issues fully.

Specified speed limit



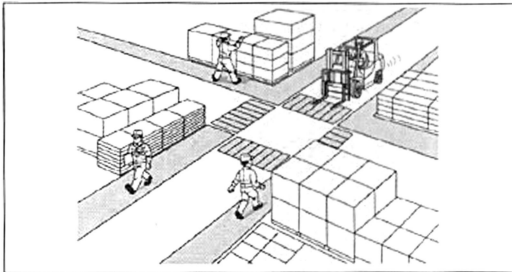
Make regulations on the limited speed of the operation area, and set up eye-catching signs to indicate.

■ Prevent falling



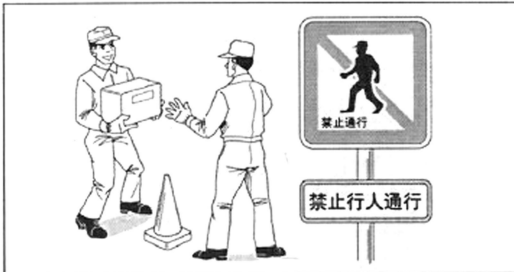
At the end points of loading platform and shore wall, it is necessary to design protective devices to prevent forklift from falling down.

■ Clear the walking area and road surface of forklift



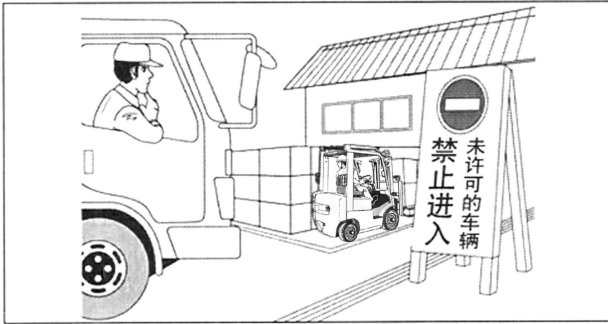
The walking area of the vehicle must be clear, and it must be sorted out in the walking area so that there are no obstacles.

■ No pedestrians in the operation area



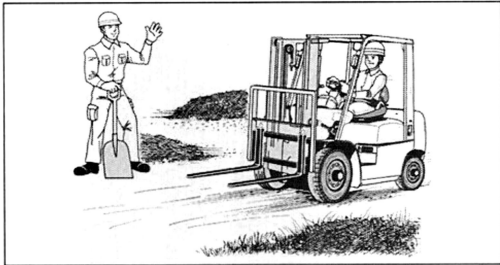
Please do not allow other pedestrians to enter the forklift operation area. In addition, please do not contact with the forklift as a guide.

■ Vehicles without permit are forbidden to enter the site



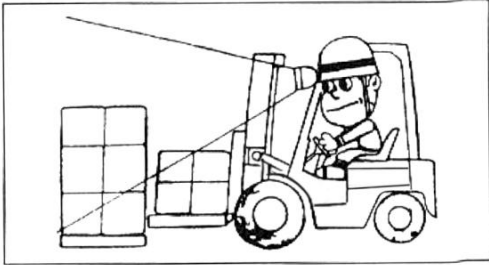
Vehicles without permit at the operation site are not allowed to enter and shall be clearly marked.

■ The workplace shall be as flat as possible, and the grease shall be wiped clean



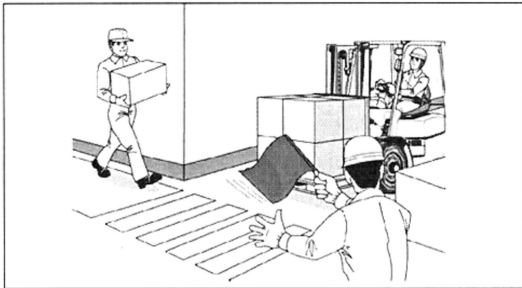
Clean up the working place and make it as flat as possible. At the same time, the grease on the road must be wiped off.

■ **Be sure to ensure the necessary light for safe driving**



In the dark passage, it is very difficult to find pedestrians and obstacles, which is very dangerous. The headlamp and rear headlamp must be complete and bright, and the passageway and workplace shall be bright and well lit as much as possible.

■ **When working in a narrow area, a commander must be set up**



Work in a narrow place or other operators and vehicles mixed together

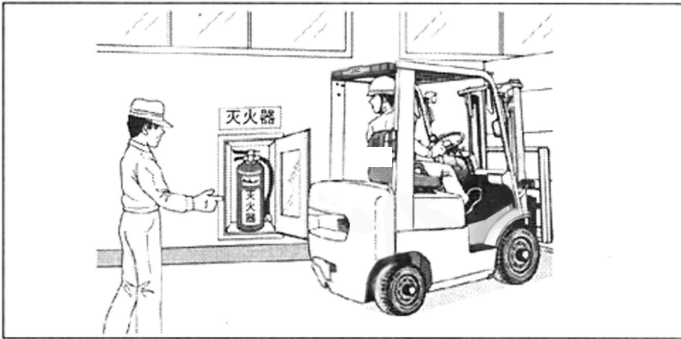
During the operation, a commander must be set up to carry out the operation according to his instructions.

■ Confirm emergency contact method



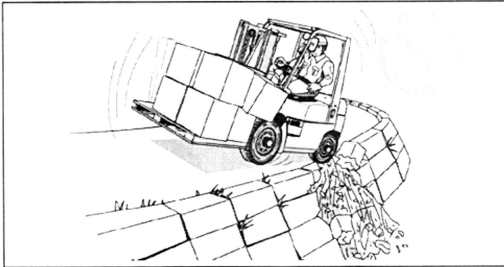
In case of fire, accident or other unpredictable events, the emergency contact method must be confirmed in advance for proper handling.

■ Setting and confirmation of fire extinguisher and first aid box



In order to prevent the occurrence of fire, accident or other unpredictable events, fire extinguishers and first-aid kits shall be set up, and their storage places and use methods shall be confirmed in advance.

■ Safe handling of dangerous places



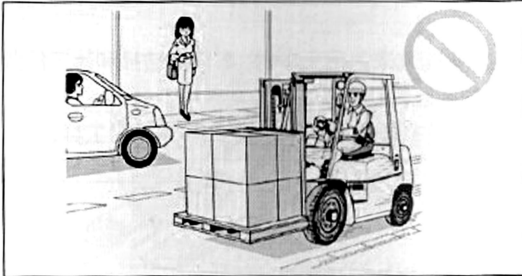
The dangerous places must be clearly marked to prevent vehicles from entering.

■ Vehicles that can run on public roads



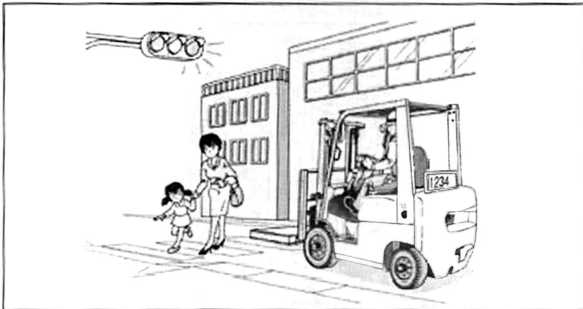
Vehicles that can run on public roads must be allowed by laws and regulations and vehicle management authorities.

■ It is forbidden to drive with cargo and traction on public roads



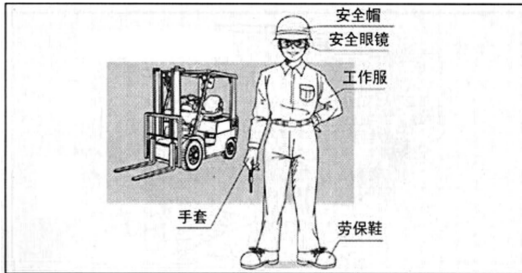
It is forbidden to drive on public roads with goods carried by forklifts, and to drive on public roads with forklifts. (except for the traction driving of the faulty vehicle) the traction driving shall not be carried out outside the public road as far as possible.

■ When driving on public roads, be sure to obey the traffic rules (turn off the work lights and rear lights)



When driving, please observe all traffic rules. In addition, when driving on public roads, please do not turn on the work lights and rear lights.

■ Be sure to wear work clothes



- please wear appropriate work clothes when driving the vehicle. Improper work clothes may be hung on the control lever or pedal, which may cause the vehicle to move by mistake.
- be sure to wear safety helmet and labor protection shoes.
- according to the conditions of the workplace, in addition to safety helmet and labor protection shoes, please wear other necessary protective equipment.

■ Do not allow unqualified drivers to drive the vehicle

Forklift drivers must be well educated and trained, otherwise they cannot be allowed to drive.

■ Safety education must be carried out for "stacking operation"



"Goods pile" refers to the stacking of goods directly over each other instead of on the platform or shelf for safekeeping. Therefore, if the "cargo pile" can not be correctly stacked, it is likely to cause cargo collapse and pose a threat to the driver and other operators around. For those drivers who often pile and unload cargo piles, safety education must be carried out.

■ Please don't let the person who is over tired or uncomfortable drive



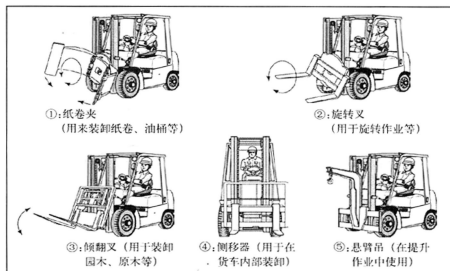
Even if the designated driver is too tired or uncomfortable, or has drunk alcohol, it is easy to cause accidents due to inattention, please do not let him drive.

■ is the type and capacity of forklift suitable?

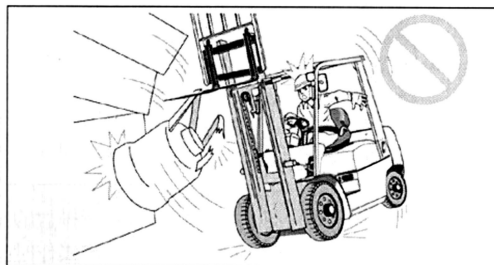
The type and capacity of the forklift selected according to the type of goods, the conditions of the workplace, etc.

Key points of inspection	Selection method
Loading capacity	The capacity categories are: 1.3, 1.5, 1.8, 2.0, 2.5, 3, 3.5, 4.5, 5 tons, etc. (note load center)
Power source	The fuel cost and emission components of gasoline (including LPG), diesel and battery vehicles are different.
Forklift type	The counterweight forklift refers to the part with counterweight installed at the rear of the car body, which is larger than the size of the car body of the forward-moving forklift. The counterweight forklift is operated by extending and retracting the gantry forward. It is compact and compact.
The place of use	Solid tyres are generally used indoors (such as forward forklift, etc.), and buffer tyres (internal combustion and battery forklift) are very compact. Generally, the pneumatic tire is used outdoors. Compared with the solid tire, if it is perforated and deflated, it will be very difficult.
Material and environment	It is very dangerous to use internal combustion forklift if it is inflammable loading and unloading such as grease. At this time, it is necessary to use explosion-proof forklift or add battery car with safety structure. (generally speaking, the battery car is much better than the internal combustion car in terms of fire safety.)

■ Selection of genus



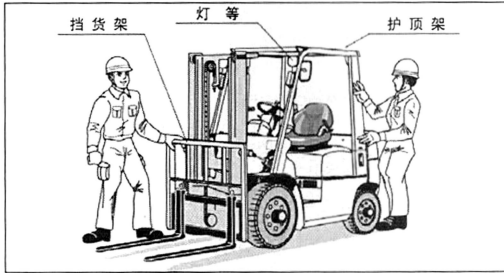
- ① Paper roll clamp (used for loading and unloading paper roll, oil barrel, etc.)
- ② Rotary fork (for rotary operation, etc.)
- ③ Tipping fork (used for loading and unloading garden wood, log, etc.)
- ④ Side shifter (for unloading inside the truck)
- ⑤ Cantilever crane (in lifting operation, use the cantilever crane and its hook.)



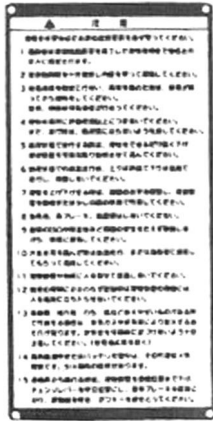
Warning

It is very dangerous to hang steel wire rope on the fork to lift the goods or directly lift the goods on the fork. Please use the cantilever crane and hook.

■ Do not use forklift when the light, roof rack and shelf are removed



When the forklift is not installed with parts such as headlamp, rear headlamp, roof rack, shelf, horn and direction lamp, it cannot be used. If it has to be removed under special circumstances, it shall be reassembled immediately after use.



■ No unauthorized modification



Vehicles and accessories that have influence on the performance, safety structure and strength of vehicles shall not be reconstructed. (example: without permission, the user manufacturer is not allowed to carry out incremental modification on the balance weight.)

■ Pay attention to keep the sign in a very readable state

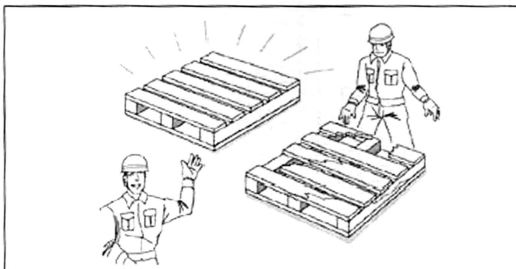
Note that in case of damage or loss, the sign must be pasted with a new one, and it must be checked during regular spot check.

■ Don't believe too much in the roof rack



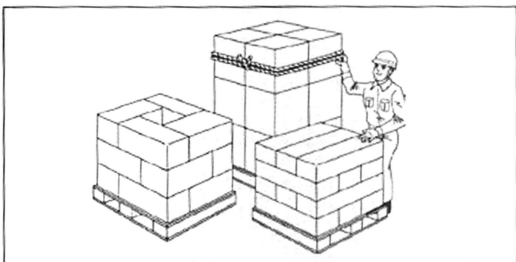
The roof rack protects the falling objects above the driver's head, but it is not able to resist the impact of all objects.

■ Use sturdy pallets



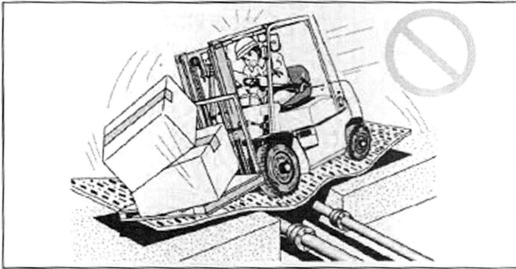
The pallet used must be able to bear the weight of the goods. Please repair the damaged tray in time.

■ Make sure that the goods are loaded and unloaded in a safe state



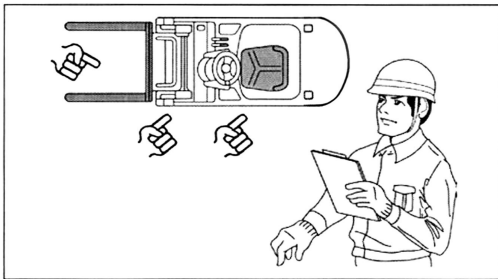
When stacking goods on pallets, it is necessary to prevent the collapse or partial loading of the goods, so that the goods are in a safe and stable state, and the top end of the goods is best tied with ropes.

■ Pay attention to the load-bearing performance of the ground



The forklift truck is very heavy in appearance (even the dead weight of the 2-ton truck is 3.8 tons), especially when loading goods, the total weight of 8-9 Chengdu is concentrated at the front wheel, and the strength of the warehouse and the passage is investigated, and if necessary, it is strengthened.

■ Please form the habit of spot check when starting work



The spot check before the start of work usually refers to the spot check conducted by the vehicle operator on the indispensable part of forklift safety before the start of operation. If there is any abnormality, report it to the management immediately, and the management gives instructions on how to deal with it.

■ Carry out regular spot check and make detailed records

Carry out monthly spot check and annual spot check on a regular basis. In case of any abnormality, repair it immediately. This kind of spot inspection requires high skills and equipment. Please give it to a professional manufacturer for handling.

■ Important safety parts must be replaced regularly

	Safety Part Name	years
1	Pump cover and dust ring of master pump and slave pump	1
2	Oil pipe for power steering	2
3	Rubber parts inside power steering	2
4	chain	2~4
5	Gantry system oil pipe	1~2

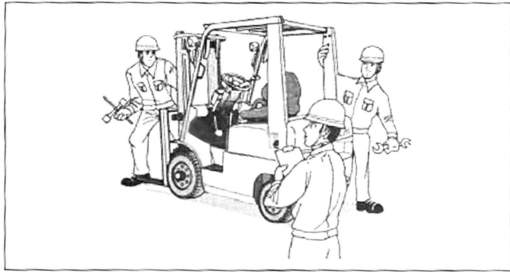
It is difficult to judge whether these parts have deteriorated from the appearance, and they will be replaced in a certain time. These parts are very important because they can lead to the falling of loading and unloading goods, wrong rotation of direction and failure of braking.

■ Never drive a forklift without maintenance



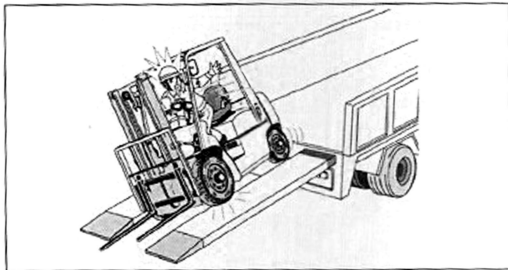
It is forbidden to use the abnormal vehicle found during the spot check before the repair is completed. Hang the "no driving" sign on the vehicle, take down the key, report to the management personnel and entrust the repair.

■ Decide the commander to carry out vehicle maintenance and accessory loading and unloading



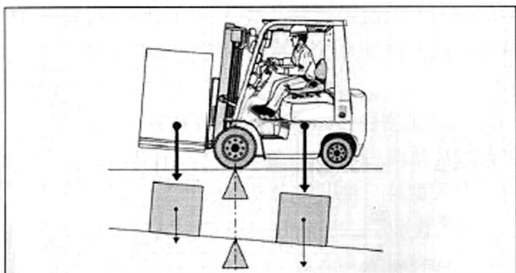
This kind of work must be directed by the decision maker and carried out according to his instructions. The forklift truck body and parts are very heavy. In addition, there is high pressure in some places. If you are not careful during the repair, you may be injured.

■ Transfer



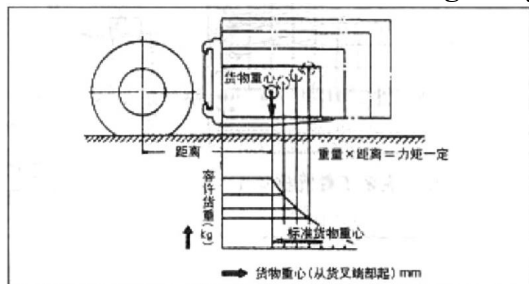
When loading and unloading goods to trucks, please do so on a flat and firm road. In addition, the shelf used must pay attention to the length, width and strength to ensure safety. It is easy to slip in rainy days. Either use the anti slide or terminate the operation. In addition, when loading and unloading goods to the truck, it is very safe to load the truck with shelves equipped with jacks and winches. Tilt the car with a jack and lift it with the traction pin of the forklift hung on the winch. The driver can operate in a safe place without driving the forklift.

■ Keep forklift balanced



The forklift is equipped with a gantry and a fork (loading and unloading device) in front of the vehicle body. Forklift truck is to ensure the balance between the center of gravity of vehicle and the center of gravity of goods. Therefore, the relationship between the center of gravity position of forklift and that of cargo is an important factor for forklift safety.

■ Be sure to know the center of gravity of the cargo



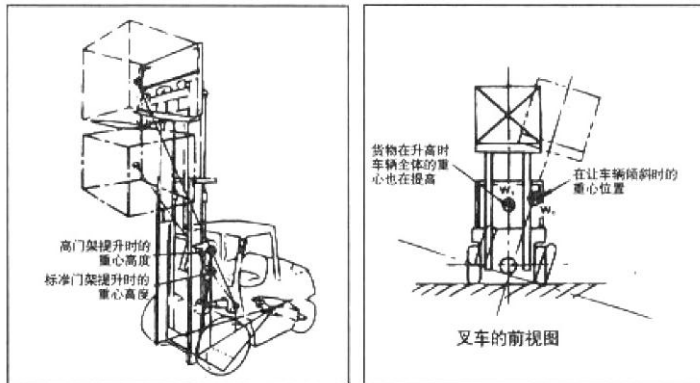
The shape of the goods carried on board is various, including box, plate and strip. In order to determine the safety, it is very important to find out the center of gravity of various shapes of goods.

■ Change of center of gravity position

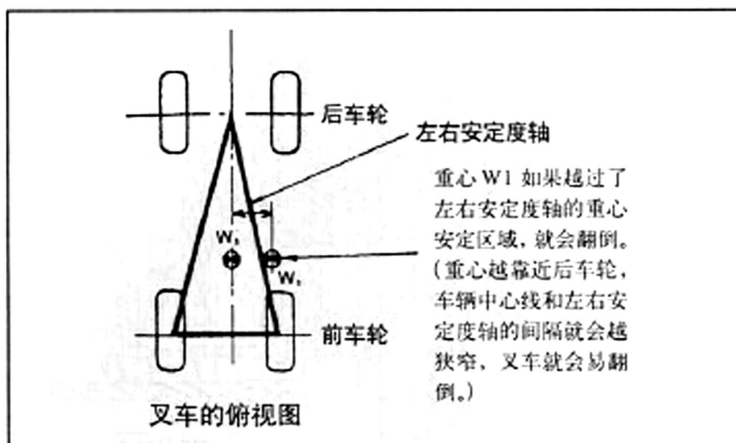
The safety and stability of a forklift is determined by the center of gravity of the forklift and the combined center of gravity of the cargo. When the truck is empty, it is the center of gravity position of the forklift itself. When the truck is loaded, it is the composite position of the center of gravity of the forklift and the center of gravity of the cargo. The center of gravity of the load changes according to the forward tilt, backward tilt of the gantry and the lifting of the fork, so the position of the composite

center of gravity also changes. In addition, the center of gravity of the forklift is determined by the following factors.

- size, weight and shape of the goods carried
- the condition of the road surface, the gradient of the road
- species of genus
- acceleration, deceleration, rotation radius
- lifting height of goods
- inclination of gantry
- tire material



■ If the center of gravity is outside the triangle, it will turn over



In order to make the forklift stable, the position of its composite center of gravity must fall on the inside of the triangle composed of the left and right ground points of the front wheel and the center points of the rear wheel (the safe and stable area of the center of gravity). If the position of the combined center of gravity exceeds the position of the front wheel, the forklift will turn forward with the front wheel as the fulcrum. If the position of the combined center of gravity exceeds the right or left side of the triangle, the forklift will turn over in its direction.

■ Maximum load weight (load weight and load center)

The load center is the distance between the center of gravity of the forklift and the root of the fork (in front of the shelf). The maximum weight that can be carried at the standard cargo center is called the maximum cargo weight.

The load weight table is a table that represents the relationship between the maximum load weight and the load center. When the load center moves to the front of the fork, the composite weight also moves to the front. At this time, the load weight has to be reduced correspondingly.

■ Acceleration, deceleration and rotation

A body at rest will always remain at rest if there is no external force. In addition, the moving object, if there is no external force, will always maintain a certain speed. This is called inertial force. When the forklift moves forward, its inertia force, that is, the

backward force, is working. When the forklift stops, its inertia force, that is, the forward force, is working. Therefore, when braking hard, the force of overturning to the front will become very big, very dangerous. In addition, when the forklift rotates, the centripetal force outward from the rotation center is working. This force is a force that turns the forklift to the outside, especially the stable area of the left and right direction of the forklift is very narrow, so when the forklift rotates, it must reduce the speed greatly to prevent the forklift from turning over. When the cargo is lifted, the position of the synthetic center of gravity becomes very high, and the risk of overturning in the front left and right directions becomes very large.

Please read the manual before driving

Before driving, carefully read the instruction manual, fully understand its contents, and then drive. Forklift may be different from each other in construction. Please strictly follow the instructions on the nameplate on the vehicle. The instruction manual shall be carefully kept and shall not be lost.



Precautions when starting:

Observe the following sequence when starting:

- release the hand brake.
- press the brake pedal.
- the adjustment of the seat shall be carried out before starting, and the adjustment operation during driving may cause misoperation, which is very dangerous. In addition, it is necessary to confirm whether it has been fixed after adjustment.

The change of front and inlet must be carried out after the forklift stops

The rapid change of direction is very dangerous.

⚠ It is forbidden to drive and rotate the fork when it is raised

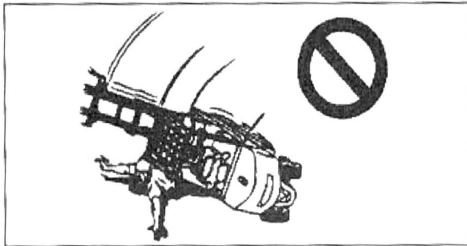
It has nothing to do with whether the cargo is loaded or not. When the fork is running at a certain height, the center of gravity of the vehicle becomes higher, which increases the risk of overturning. It is forbidden to drive and rotate the fork when it is raised.

⚠ Lower center of gravity when driving (especially when carrying goods)

When driving (especially when carrying goods), in order to make the center of gravity of the vehicle lower, the distance between the fork and the ground shall be kept at 20cm as far as possible, and the gantry shall be tilted back in place.

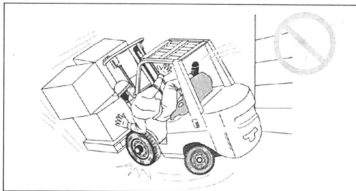
⚠ Do not load or unload goods in a hurry

Under the condition of carrying goods, please do not carry out the rapid fork lifting and lowering operation and the front and back tilting operation of the gantry. In this way, the vehicle may overturn.



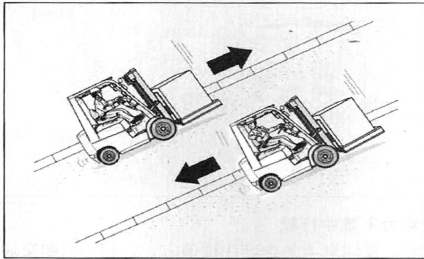
⚠ It is forbidden to drive in a hurry, stop in a hurry, turn around, etc

Please don't drive violently in case of sharp advance, emergency stop, sharp turn, etc. Slow down during rotation. Especially in the case of no-load, the rear of the vehicle is very heavy, rotating rapidly forward, very easy to overturn.



Driving on a ramp

- do not rotate, drive horizontally or diagonally on the ramp, otherwise the forklift may overturn.
- when sharp slope occurs, pay attention to the height of the road surface to prevent forks, pallets and the ground from colliding.
- when climbing with no load, drive backward when climbing uphill and forward when descending.
- when climbing with cargo, drive forward when climbing and backward when going down.
- please use the braking system when going downhill. Please use foot brake when going downhill and drive carefully.



Stay away from the soft side of the road

Don't approach the soft side of the road, because it is in danger of collapse.

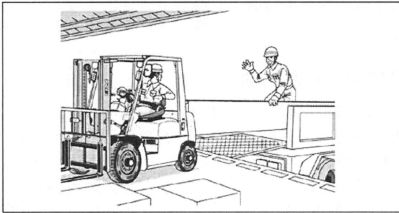
On narrow roads and platforms, a certain safety distance shall be kept from the edge to prevent vehicles from falling.




In case of operation

- there is a risk of falling at the edge of the platform, so it is forbidden to use it. Please don't drive at the side of the platform. There is a risk of falling. Falling accidents often lead to death.

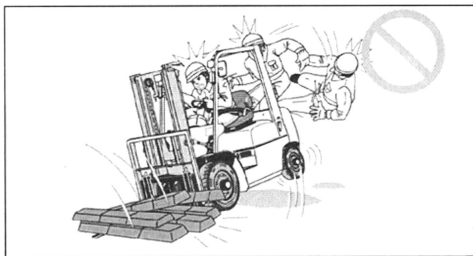
- the allowable load and safety degree of butt joint plate shall be confirmed before operation, and improper butt joint plate shall not be used.
- pull on the parking brake of the freight car and add the brake block at the wheel to prevent the freight car from sliding.
- Jack the trailer to prevent the forklift from dropping significantly due to sudden load when driving towards it.



- slow down when entering and leaving the car, and pay attention to the safety of connecting plate.
- please pay attention to the walkers.
- be sure to inform the truck driver not to move the truck until the work is finished.
- fix the connecting plate to prevent it from slipping.

 It is strictly forbidden to replace the balance weight and double driving with people

Do not use people to replace the balance weight. People other than the driver are not allowed to take the bus.

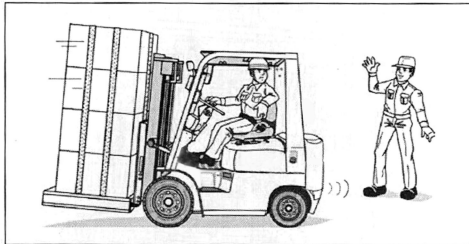


⚠ It's very dangerous to back up only by rearview mirror and reversing buzzer. you need to see it directly



When driving backward, face to the rear, and drive after confirming the rear directly. The rear-view mirror and backup buzzer are auxiliary devices.

⚠ When the cargo is very high, drive backward and configure the guide



When the cargo is very high, the vision in front is poor. At this time, turn your face to the rear and drive backward after confirming the rear. At the same time, in order to confirm the safety of the goods and surrounding areas, the guide personnel shall be allocated.

⚠ Never drive a forklift that has not been inspected

Check the unfinished forklift before operation, please do not drive.

If there is any abnormal situation, please report to the manager immediately and go through the repair procedures. Please do not

drive until the repair is completed.

⚠ Repair immediately in case of any abnormality of rearview mirror, reversing buzzer, lamp and other parts

Adjust the rear-view mirror to the position where it is easy to observe the rear, and wipe the surface clean. When the joystick is placed in the back position, observe whether the reversing buzzer sounds. If not, repair it immediately. Please confirm whether all kinds of lights are on, and replace them if not.

⚠ Do not drive with wet or oily hands

Danger of slipping when turning steering wheel and control handle

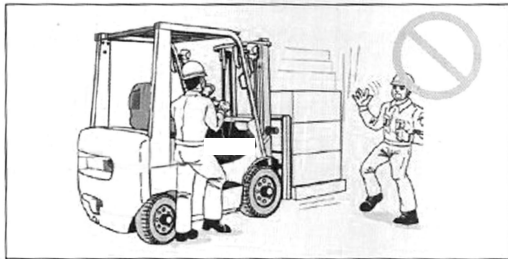
⚠ Do not get on or off at full speed

It's very dangerous to get on and off at full speed. It's forbidden.

When getting on and off, when the forklift completely stops, step on the pedal to support the body. In addition, the pedal should be kept clean and complete. If there is any damage, it should be repaired immediately.

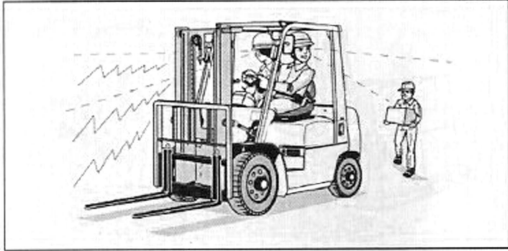
⚠ Do not operate outside the seat

The operator must sit on the seat before operation. It is not allowed to operate the forklift outside the seat.



When starting, please confirm the safety around

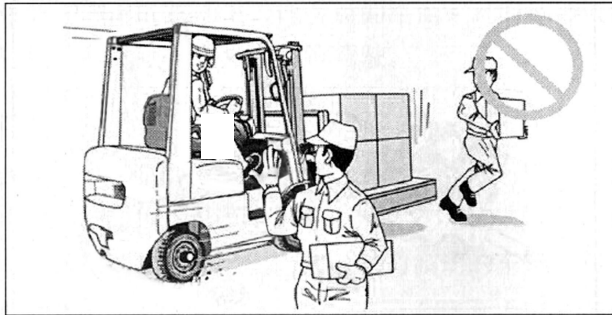
When starting the vehicle, make sure that it is safe around and press the horn before moving forward.



Safety in driving

● **Don't concentrate on driving**

You should always pay attention to the direction of the road. Failure to concentrate on driving may cause accidents. Reduce the speed and pay attention to the distance.



● **Observe the maximum speed limit**

Please abide by the maximum speed limit.

● **Please pay attention to the surrounding conditions when driving**

Please pay attention to the safety around the vehicle, as well as the direction of advance and rotation.

- **no overtaking where visibility is poor**

Overtaking is not allowed in places with poor visibility such as intersection and corner.

- **slow down and honk the horn where visibility is poor**

In places with poor visibility, such as intersections and corners, as well as narrow road entrances and exits, stop for a while and honk the horn to confirm safety.

- **when crossing roads and corners, stop for a while to confirm safety**

When crossing roads and corners, stop for a moment to confirm safety.

- ⚠ **It is forbidden to drive on the ground with water or accumulated water**

When driving, avoid the road with water or ponding and the road with holes.

- ⚠ **No driving on soft road**

Please do not drive the forklift into the soft and loose road.



- ⚠ **Do not drive beyond obstacles (stones, channels, grooves)**

When there are obstacles such as stone, channel steel and groove on the road surface, do not drive beyond them by force, and drive carefully when necessary.

- ⚠ **Don't drive on slippery roads**

Please avoid driving on slippery roads.

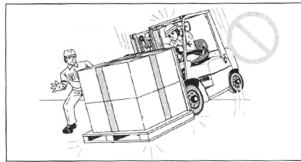
- ⚠ **Pay full attention to the bearing weight limit of the ground**

When entering the building or elevator, pay full attention to the bearing weight limit of the ground, and do not overload driving.

Precautions for access to restricted places

When entering or leaving places with limited height and width, please pay attention to the following:

- ensure sufficient width and height when the vehicle passes.
- keep hands and feet out of the vehicle.
- please confirm the safety around.
- please pay attention to the wires and obstacles inside and outside the house.



The forklift is different from the forklift in rotation. Pay attention to the swing range at the rear

When rotating in the forward state, the rear part of the vehicle swings outwards substantially, and it is necessary to ensure the distance from the wall, etc.

Longer braking distances on downhill and wet roads

In downhill and wet road, the braking distance is longer than that of ordinary road. Fully estimate the margin of braking distance and drive carefully.

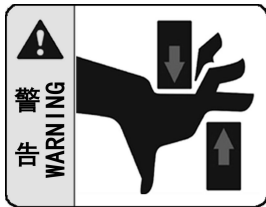
Practice carefully and get familiar with the vehicle

Before use, be sure to study carefully to get familiar with the vehicle. Even if you are familiar with it, you should drive carefully and operate without reason, which is easy to cause personal accidents and material damage accidents.

When driving several forklifts

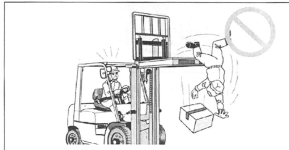
When driving several forklifts, even the forklift with the same performance, its brake, accelerator and lifting device may be different. In the case of changing cars, it is very important to be prepared to analyze and master its position, especially the feeling of braking.

warning



● **no overloading**

There is a clear record on the load table of the vehicle. Please do not overload. Once the rear wheel floats, it is impossible to drive and rotate. In addition, there is a risk of overturning.



- It is forbidden to stand under the fork and never stand under the raised fork. The fork is fast when it is descending, which is dangerous for personal accident.



- do not stand on the fork

Never let people stand on the fork to rise and fall. People are easy to fall off the fork, which leads to personal accidents.

- do not put hands and feet into the gap of the gantry. Never put hands and feet into the gap of the gantry and the connecting materials of the gantry. Otherwise, if the gantry moves, there is a risk of injury.

Danger of off load

Keep the center of gravity of the goods in line with the center of the vehicle. There is a danger of rollover when driving under off load.

Goods against the shelf (up to the root of the fork)

The loaded goods lean on the shelf for driving.

Do not unload goods when they are unstable

Cargo in unstable state shall not be loaded or unloaded. When the goods are easy to collapse or slide, they shall be fixed before loading and unloading.

When loading and unloading overlapping goods, be sure to pay attention to stability

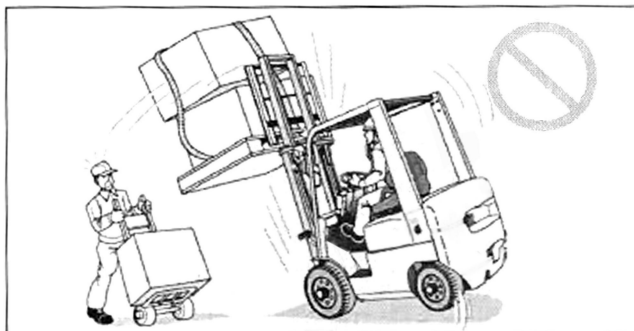
When loading and unloading overlapping goods, be sure to pay attention to stability

It is forbidden to load goods with height higher than the shelf

The height of loading and unloading goods is limited within the height of the storage rack. Please do not carry if it exceeds the height. When the height of the goods exceeds the shelf, it is easy to cause the goods to slide down to the direction of the operator. In the worst case, it may lead to death accidents.

Do not lean forward when goods are raised

Please do not tilt the gantry forward when the goods are raised. This is easy to cause the goods to slip and the vehicle to overturn.



Lifting operation and driving are forbidden when the gantry is tilted forward

Do not lift or drive when the gantry is tilted forward.

When the vehicle is inclined, loading and unloading operation is prohibited

Please do not carry out loading and unloading operation in the inclined place.

Take care not to loosen the chain

Once the chain is loose, the door frame channel steel and fork are easy to hang on the goods or shelves, at the same time, it is easy to cause the risk of goods falling and vehicles overturning. Always check the chain to prevent slack.

No use except for the purpose of use

It is forbidden to use the forklift except for its original purpose.

● **Close / open the door**

It is forbidden to open or close the gates of railway vehicles and warehouses.

● **Push other vehicles**

Please do not use it to push other vehicles.

●Do not hang the wire rope on the fork for lifting

Please do not hang the wire rope directly on the fork to lift the goods.

●Traction operation

Please do not tow or be towed

●Please do not drag or be dragged

Please do not use fork to push or pull the goods. The goods are in danger of falling and damage. Especially in the case of lifting height above 150cm, it may lead to the risk of vehicle overturning.



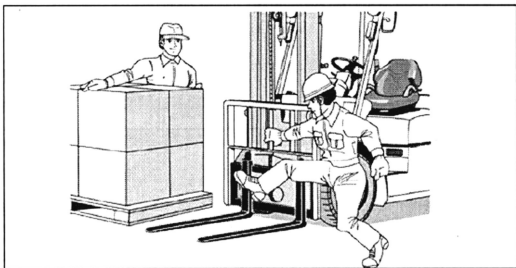
The space between forks should be adjusted to the most suitable position

According to the size of loading and unloading goods, adjust the fork spacing to the most appropriate position.



Please adjust the fork spacing with your feet

Please use your feet to adjust the fork spacing. Danger of trapping if adjusted by hand.



Confirm the fixed state of the fork

After the fork interval is adjusted, fix the fork with fork stop pin and confirm.



The tension of the left and right chains should be consistent

Please adjust the tension of the left and right chains to the same level. In case of inconsistency, even if the loading method is correct, the forklift may overturn just like the partial load.

 **Pay attention to the front end of the fork, do not hang people or other items**

The front end of the fork is sharp and dangerous. In addition, when other items are hung on the front of the fork, the vehicle sometimes moves in an unpredictable direction, which is very dangerous.

 **In the workplace, except for the guide, pedestrians are not allowed to enter**

In the workplace, except for the guide, please prohibit other pedestrians from entering.

 **Keep away from forklift during loading and unloading**

Do not let people or other vehicles near the forklift during loading and unloading.

 **When working together, follow the instructions of the commander**

The driver shall operate according to the instructions of the commander.

 **Use tray with enough strength**

Please use a pallet with enough strength. When using a damaged pallet, the goods may fall down.

 **Pay attention to loading and unloading long and wide goods**

When loading and unloading long and wide cargoes, drive carefully. The lifting and lowering of cargoes shall be carried out slowly, especially to avoid collision with other cargoes. In addition, keep the load as low as possible, pay attention to balance, and operate slowly to prevent the goods from moving during rotation.

 **Pay attention to the wiring, piping and roof beam above the head**

Pay attention to the wiring, piping and roof beam on the top of the head, so as not to collide with the gantry or roof protection frame. In case of collision, the cargo may fall and the vehicle may overturn. In particular, when the fork rises, the height of the gantry should be paid full attention to.

 **Direct unloading from the raised fork is not allowed**

People should not directly unload the goods on the fork.

Do not use people to suppress the load on the fork

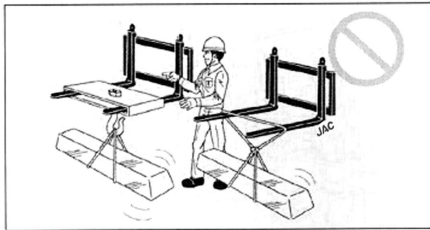
Do not use people to suppress the load on the fork. The unpredictable movement of vehicles will cause the goods to fall down, which is very dangerous.

Do not press in or pull out when the gantry is raised very high

Use the traction of the vehicle to press in and pull out the goods, and press in and pull out the goods according to the expansion of the gantry, which is easy to cause damage to the vehicle and goods, and turn over to an accident, please do not carry out such operation.

It is forbidden to use steel wire rope to hang on the fork for lifting operation

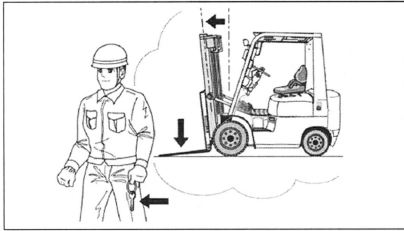
- if the steel wire rope is directly hung on the fork or accessories to lift the goods, the steel wire rope may be cut off or slipped, which is very dangerous.
- especially when a single fork is used for lifting, it is easy to cause the accident of left and right rotation of the forklift, and it can never be carried out.



- when lifting goods, please use hook or cantilever crane and other accessories.
- the steel wire rope and other lifting ropes used must be sufficient according to the weight and strength of the goods. In addition, appropriate lifting angle shall be used to make the length of the rope as short as possible.
- when lifting with steel wire rope, it is necessary to drive slowly and cautiously when traveling and rotating. When the goods swing a lot, it is easy to cause the forklift to overturn. In addition, the goods should be kept as low as possible.

Before leaving the forklift, be sure to observe the following work sequence

- lower the fork to the ground in a safe place.
- incline the gantry slightly and put the front end of the fork on the ground.
- pull on the parking brake.
- position the direction change lever in the neutral position.
- turn the key to the "off" position.
- remove the key.



Parking at designated places

Please stop at the designated place.

Select enough strength road parking

Please stop on a road with enough strength.

Stop where traffic safety is not impaired

Try to avoid the place close to the emergency exit, stairs, fire-fighting equipment and other safety equipment, and stop at the place that does not hinder the safety of pedestrians and traffic.

No parking near inflammables

No parking in the vicinity of inflammables.

Put a stop on the tire when parking on the ramp

As a last resort, when it is necessary to park on a ramp, in addition to the usual parking sequence, a stop should be added at the tire to prevent the vehicle from moving.

Parking of faulty vehicles

In case of forklift failure and fork can not fall down, it is necessary to hang a striking sign on the front end of fork to prevent pedestrians and vehicles from colliding with it. In addition, the parking place shall be the place where pedestrians and vehicles do not pass, and the fork shall not pass. (danger under fork)

The faulty vehicle must be removed from the key and attached with a no use sign

The faulty vehicle must be removed from the key and attached with a no use sign.

It is not allowed to climb the truck body

It is very dangerous to use the forklift truck body as a platform and the gantry as a ladder. Inadvertently touching the operating handle will lead to unexpected actions of the gantry, which will be clamped between the gantry and the car body, leading to a major accident.



Warning

Spot checks and routine repairs can only be carried out by persons with permits.

The routine inspection and repair of vehicles must be carried out by persons with permits and qualifications. The wrong spot check and repair work are very dangerous for vehicles.

 **Park the vehicle in a flat place before work**

Spot check and routine repair shall be carried out in a flat, dry and dust-free place.

 **Pay attention to the ventilation of the spot check in the house**

When carrying out spot check in the house, attention must be paid to ventilation.

 **Confirm the location and use method of fire extinguisher**

Prepare the fire extinguisher for the fire, and understand its use method correctly at the same time.

 **Place the lifting device on the road before operation**

Put the lifting device (fork) on the road before operation.

 **Place the joystick in the neutral position before operation**

Before operation, speed control handle and lifting control handle are all in neutral position. The spilled oil and butter should be wiped clean immediately, As soon as the oil and butter fall off, please wipe them clean immediately. In addition, if the oil leaks, please wipe them clean immediately. After being soiled, it will be difficult to find faults such as cracks.

 **No fireworks (especially when using grease or fuel wipes)**

It is strictly prohibited to use oil wipes such as fireworks, grease and fuel to ignite easily, which is very dangerous.

 **Put on the right work clothes**

Put on suitable work clothes that are easy to work.

 **Wear safety gear (helmet, safety shoes, safety glasses, gloves)**

Please use appropriate safety equipment (helmet, safety shoes, safety glasses, gloves).

 **Take care not to fall when working on the vehicle**

Take care not to fall off when the vehicle is being operated.

 **Don't put your feet under the fork**

Never put your feet under the fork.

 **Take care not to clamp your hands between the front panel and the hood**

When opening and closing the battery cover and door, be careful not to clamp your hands.

 **When carrying out spot check and repair for the fork in the raised state, necessary treatment must be carried out to**

prevent the fork and gantry from falling

In order to prevent the falling of the fork and the gantry, a support block is added under the inner gantry for spot inspection and repair when the fork is raised.

 **When working together, determine a commander and follow the instructions of the commander**

During the joint operation, a commander shall be determined to carry out the operation according to the instructions of the commander.

 **Use tools suitable for the job**

Please use tools suitable for spot check and repair. It is very dangerous to use tools that are not completely suitable.

 **It is forbidden to use the tool outside its functional scope**

Please do not use the tool outside of its functional scope, otherwise it is very dangerous.

 **Pay attention to the injection of hydraulic oil under high temperature**

After vehicle operation, the hydraulic oil will become high temperature and high pressure. In this state, please do not drain oil or change filter element. High temperature hydraulic oil will spray out, which is easy to cause burns.

 **The oil pressure system often accumulates pressure and operates after reducing pressure**

The oil pressure system often has residual pressure. Before operation, it must be depressurized.

In case of oil leakage, please wear safety glasses and thick gloves, and use thick paper or synthetic board to contact the inspection place for spot inspection. High pressure oil can be very dangerous if it comes into contact with skin and glasses.

⚠ Please pay attention to the doctor's treatment after contacting with high pressure oil

Please accept the doctor's treatment immediately after contacting with high pressure oil.

⚠ The spot check of the rotating part must be carried out after the battery socket is disconnected

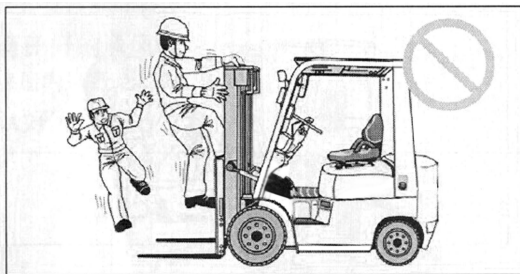
If the rotating part touches the body or tool, it is easy to be involved, which is very dangerous. Never touch it.

For the spot check of the rotating part, the switch must be placed at the "off" position, and the battery socket must be disconnected before proceeding. Don't put anything easily involved around the rotating part.



⚠ Do not use the gantry as a ladder

- during spot check and adjustment, do not use the connecting plate of the gantry or the shelf as a ladder for climbing operation, which is very dangerous. Unexpected movement of the gantry may cut off hands and feet.
- when the gantry is used as a ladder, people may slide or fall off the gantry.



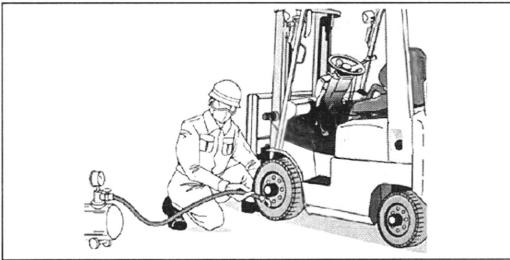
⚠ Pay attention to tire air pressure adjustment (rim, air compressor)

- please adjust the pressure of the tire at the position where the tread of the tire is straight to each other, not at the side.
- when using air compressor to inflate tire, first adjust air pressure of air compressor. Without regulation, it is possible to rise to the maximum pressure of the air compressor, which is very dangerous.
- operators of high-pressure inflation must be specially trained.

For disassembly, the assembled tire inflation operators must receive special training and education.

- when using compressed air, please wear safety glasses and masks.
- when the tire is inflated, due to the pressure of the gas, it is easy to cause dust to fly away, and there is a risk of entering the eyes and mouth.

Please wear safety glasses and masks.



⚠ For disassembly and assembly of tire, inner tube and rim, please entrust a special manufacturer

Please entrust the tire disassembly and assembly of forklift to a special manufacturer.

The air pressure of tire is very high (usually 700-1000pa), so pay attention to it when using. If the assembly is not good, it is easy to cause the tire to break and the parts to fly away, resulting in a big accident.

⚠ The nuts for mounting the tyres must not be loose

There are two ways to fix the wheel, one is the hub nut type to fix the wheel on the hub, the other is the fixed nut type to press the wheel inside and between the hub with a wedge ring. The wheel is fixed by the side ring and the locking ring.

When the tire is removed from the vehicle, if it is removed under the condition of poor assembly of locking ring, the side ring, tire and wedge ring may fly out. Therefore, sufficient inspection shall be conducted before operation.



The bolts and nuts for assembling the rim shall not be loose

- there are hub bolts for assembling hub on the wheel and rim nuts and bolts for assembling two rims on the wheel. Remove the tire from the vehicle. Do not loosen the bolts and nuts of the rim assembly.

According to the pressure inside the tire, the rim, as well as the wheel bolt and nut will be flying off, which is very dangerous.

- pay attention to the assembly direction of the rim when changing the tire.

The mounting bolt head of the rim must face outward.

(it is very difficult to loosen the rim bolts in the state of vehicle assembly, so there are bolts of special shape.)

- when changing the tire, carry out driving test, and then confirm whether the rim bolt is loose again.

In case of insufficient tightening torque, please tighten according to the specified torque.



Warning

Precautions when using jack

In the process of jacking with Jack, never enter under the vehicle, because the vehicle is in danger of falling to the ground suddenly.

- when using jacks, it is very dangerous for vehicles to load and unload goods. Be sure to remove it before working.
- when Jack is used for jacking, the operator must leave the seat.
- the jack stops after the tire is lifted a little distance from the ground, and inserts cushion blocks at both sides of the frame to prevent the vehicle from falling suddenly.
- before jack lifting, add stop block at tire to prevent vehicle movement.
- when lifting the vehicle, use crane and crane for operation.

When lifting the vehicle, it must be operated by the crane and crane operators.

- the vehicle must be lifted at the designated lifting place.

The vehicle must be hoisted with steel wire rope at the designated lifting place.

- the wire rope must be free from damage and have sufficient strength.

The steel wire rope used for vehicle lifting must be free of damage and have sufficient strength.



Precautions for use of battery

As soon as the electrolyte of the battery is adhered, wash it immediately with plenty of water

The electrolyte of battery contains dilute sulfuric acid, which has corrosive effect on clothes or skin. If the electrolyte sticks to the clothes or skin, wash immediately with plenty of water.

- if the battery electrolyte gets into the eyes carelessly, please receive medical treatment immediately

If the battery electrolyte gets into the eyes accidentally, please wash it immediately with a large amount of water, and then receive the doctor's

treatment urgently.

- when using battery, please use safety mirror

Please wear rubber gloves, rubber boots, protective glasses, etc. when carrying out battery exchange and charging, electrolyte supplement and specific gravity adjustment.

- treatment when the battery electrolyte is taken by mistake

When the battery electrolyte is ingested by mistake, you should immediately take a large amount of clear water or milk mixed with egg white or salad oil, and then receive emergency treatment from the doctor.

- no fireworks for storage battery

The battery is in danger of explosion because it produces hydrogen.

Therefore, do not use lighters and other fire sources around the battery.

In order to prevent sparks, when the cables of the battery and charger fall off, be sure to stop the charger or turn the switch of the charger to the "off" position.

- do not short circuit the two poles in order to check the charging condition of the battery

- the battery terminal shall be disassembled from the ○ - terminal, but the ○ - terminal shall also be finally assembled

When removing the battery, remove it from the battery lead of the ○ - terminal of the battery. When installing the battery, first connect the battery lead of ○ - terminal, and finally assemble the battery lead of ○ + terminal.

- do not disconnect the charger from the socket during power on

- do not place metal tools above the battery

- be careful not to short circuit the battery

Do not let the metal contact directly between the two poles of the battery ○ - ○ + and do not let it short circuit. As soon as the terminal is loose, sparks will be generated due to poor contact, which is dangerous for explosion. The terminal must be installed firmly. When removing the battery, confirm the ○ + ○ - pole of the terminal, and pay attention not to connect reversely when reassembling.

- when turning the positive battery screw, please do not touch the tool to the metal part of the vehicle body

This is easy to cause short circuit and spark.

- pay attention to the liquid level of the battery

When the liquid level of the battery is used and charged below the lowest liquid level line, it will accelerate the internal deterioration of the

battery, not only shorten the life of the battery, but also lead to explosion.

Please replenish the electrolyte frequently to keep the liquid level between the highest liquid level line and the lowest liquid level line.

- **the battery must be cleaned when the cover is tightened**

When cleaning the battery, make sure the end cover of the battery is tightened.

- **the charging of storage battery shall be carried out in a well ventilated place**

Hydrogen is easy to be produced during the charging process of the battery, which is dangerous for explosion. Please do it in a place with good ventilation. (battery filling cover needs to be opened)

- **when charging the battery, please follow the instructions in the charger operation manual**

- **no fireworks during battery charging**

Hydrogen is easy to be produced during the charging process of the battery, which is dangerous for explosion. Please do not approach the fire source.

- **the charging shall be started when the battery liquid temperature is below 35 °C**

Hydrogen is easy to be produced in the charging process of storage battery, which is heated due to chemical changes. The battery can be charged only when the electrolyte temperature is below 35 °C.

(when the battery electrolyte temperature exceeds 50 °C, please stop charging immediately, and restart charging after it cools to below 35 °C.)

- **the battery used in the battery car is high voltage**

For vehicles powered by batteries, the battery voltage is generally higher than 48V, and there is a risk of induction and injury.

- **pay attention to static electricity during cleaning**

It is easy to generate static electricity when cleaning the upper and surrounding connecting parts of the battery with dry cloth and duster or covering the battery with plastic film, which may cause explosion.

- **pay attention to the static electricity of the body**

Before the spot check and cleaning of the battery, remove the static electricity from the body contacting the metal far away from the battery, and then start the operation.

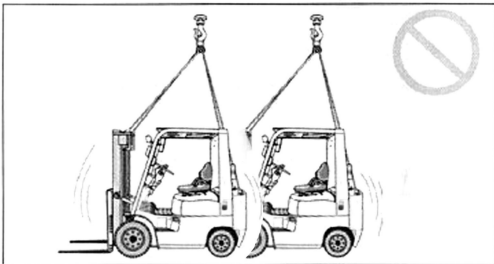
When dealing with oil, solvent, battery and other objects, we should act in accordance with laws and regulations

Please deal with the oil, solvent, battery and other harmful substances according to applicable laws and regulations.

Warning

When the forklift is lifted with the roof guard and balance weight, the car body is in danger of damage and falling, so it is absolutely not allowed to use this to lift.

Please use specific vehicle lifting tools when carrying out lifting operation during transfer. Please contact our sales agent.

**●Waste battery treatment:**

1. The treatment process shall be carried out by a qualified organization.
2. The discharge of water, dust and smoke in the treatment process shall meet the requirements of gb8978 and gb16297.
3. The production operation of recycling enterprises shall meet the requirements of gbz1, gbz2.1, gbz2.2 and gb13746.
4. The recycling shall meet the requirements of HJ 510-2009 and 431-001-031.

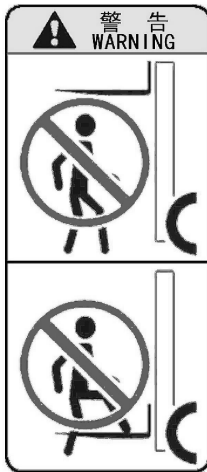
The notice sign pasted on the vehicle is used to explain the use method and precautions of the vehicle. Please refer to the instruction manual. This is not only for your sake, but also for the sake of safe operation precautions. After the sign falls off, please re stick it immediately.

Warning

For the safety of operators, please observe the following precautions.

1. Operators must be trained and qualified.
2. The contents of the instruction manual must be understood accurately and followed.
3. The spot check shall be carried out truthfully before operation. In case of any abnormality, the operation shall be carried out after the repair.
4. Never overload the goods. In addition, pay attention not to bias load when driving.
5. When driving under the loading state, keep the goods in the low position as much as possible, and at the same time, the gantry shall be tilted back as much as possible.
6. In the loading state, when climbing, advance when climbing, walk backward when going down, and do not rotate.
7. Confirm the level of the road surface when the goods are up and down. At the same time, try to keep the gantry vertical or slightly backward.
8. Please do not carry out quick advance, quick brake, quick rotation and other operations.
9. Accurately confirm the concave and convex condition of the road surface and the surrounding obstacles, and drive carefully.
10. When loading large goods, drive backward. In addition, set a guide person to drive according to the instructions of the guide person.
11. No other person is allowed to ride on the gantry or vehicle while driving.
12. No matter whether the goods are loaded or not, no one is allowed to stand around the gantry during operation. When working in oil, dead grass, paper and other inflammable places,
13. The exhaust gas and exhaust pipe may catch fire. Be careful not to let inflammables near the exhaust pipe. (except for battery forklift)
14. Do not smoke or fire during refueling or battery charging. There is a risk of explosion.
15. Leave the seat with the gantry in the low position and the gear lever in the neutral position, then pull on the parking brake, disconnect the power and remove the key.

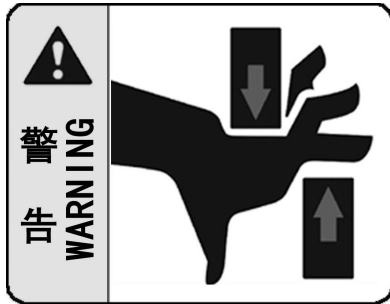
Do not allow access to the upper and lower parts of the lifting gear (warning)



How to use pneumatic tires (warning)



Do not place hands and feet on the gantry (warning)



No boarding from front panel



Caution label for battery use

Spot check of battery liquid level

No fire source for storage battery

Warning

When the liquid level of the battery is below the low lever (minimum liquid level line) for use and charging, it will accelerate the change of the internal part of the battery, not only shorten the life of the battery, but also lead to explosion.

Make up fluid frequently to maintain the liquid level of the battery between upper lever and lower lever.

Warning

The battery will produce hydrogen gas, which may cause explosion

Do not let lighters and other sources of fire close, and do not produce sparks.

In order not to generate sparks, when removing the cable of the battery and charger, make sure to stop the charger or turn the switch of the charger to the off position.



严禁烟火



戴眼镜



儿童禁止



注意硫酸



熟读说明书



注意爆炸



注意触电

When the battery is used by mistake, it is easy to cause slight injury and serious injury.

It is easy to cause explosion or fire due to fire source or static electricity.

A sprinkling of sulfuric acid is easy to cause fire injury and blindness.

When touching the conductive part, it is easy to be electrified and cause fire injury.

In the process of power on, the falling off of plug is easy to produce electric spark and cause fire or explosion.

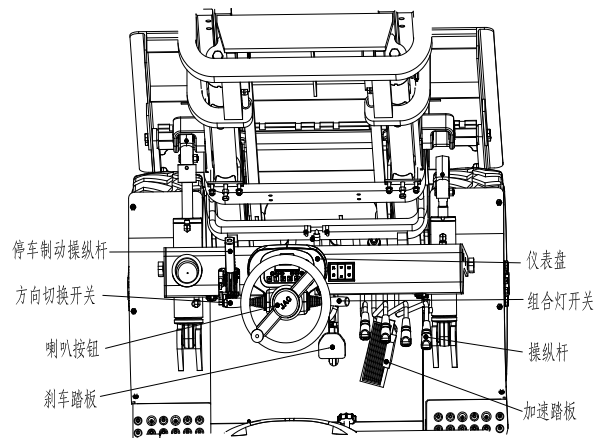
- no fireworks = do not short circuit or produce sparks, and do not close to fireworks or other sources of ignition.
 - pay attention to static = do not use a duster or dry cloth for cleaning.
 - pay attention to air change = please do not use and charge in the sealed place or the place with poor ventilation.
 - pay attention to sulfuric acid = wash with plenty of water as soon as sulfuric acid is sprinkled on the skin, body or clothes.
- As soon as sulfuric acid is sprinkled into the eyes, immediately wash with plenty of water, and then receive the treatment of ophthalmologist.
- pay attention to the liquid level = the battery will overheat when the electrolyte is used up, and leakage will occur when the electrolyte is added too much, and pay attention to prevent it from happening.
 - pay attention to electric induction = wear protective glasses, rubber gloves, rubber boots and other protective devices during spot check and repair.

2.Operating device

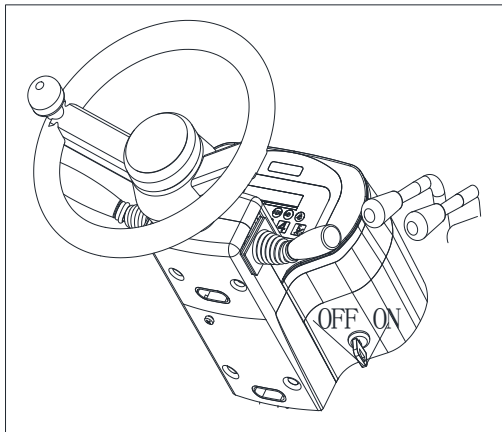
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Control lever and pedal.....	36
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In this book, there are the following precautions.

In order to protect the vehicle ownership and the safety precautions of the operator, please strictly observe and implement. Operation, spot check and maintenance shall not be carried out unless the vehicle is well known. All terms and symbols used in this book and on the vehicle nameplate have the following meanings:



Signal	The consciousness of symbols
Danger	A symbol indicating that it is very easy to cause death and injury accidents and must be observed
Warning	Indicates a symbol that can lead to the occurrence of a fatal accident and must be observed.
注意	表示能够导致死伤、损坏车辆及周边物品情况的发生，而必须遵守的一项符号。
注	与事故和故障无关，但为了延长车辆的使用寿命而希望能够熟知的一项符号。



0

OFF The switch is closed. The key can be inserted or removed.

ON The electrical control circuit is opened, and the main interface of the instrument is displayed for about 3 seconds, without fault display, and the operation preparation is completed.

Warning

- for safety, please unplug the battery plug when touching the electrical parts by hand. Even when the switch is in the "off" position, there is still voltage in the main circuit.
- when leaving the forklift, the key switch must be turned to the "off" position, and the key must be removed for safekeeping.

Warning

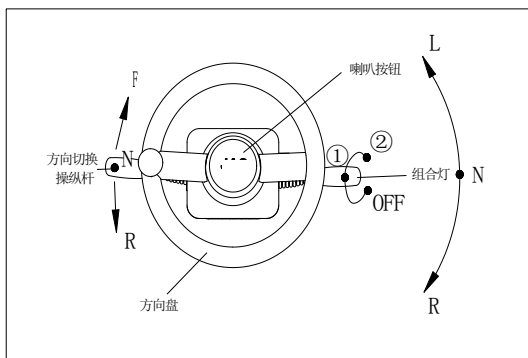
When the following operations are carried out, the safety circuit of the forklift plays a role. In this state, the forklift cannot be started and must be resumed.

The shift lever is operated before the keyswitch is turned to the on position. (when the shift lever is not in the middle position, turn the key switch to the on position)

-Recovery method-

Return the shift lever to the middle position, turn the key switch to the off position and then to the on position.

Combination lamp



The switch is a rotary switch

Operation Light	OFF	②	②
Front light	×	○	○

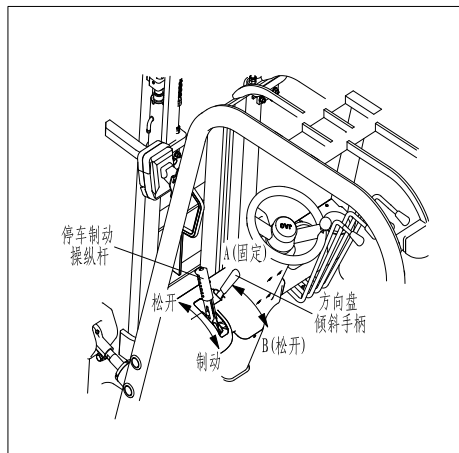
○: Light on ×: Lights out

L	Left side light flashing
N	No light
R	Right side light flashing

Direction switch lever

The direction indicator lights (front and rear) flash to indicate the direction of the forklift.

F	forward
N	Median
R	Back up (backup light on, backup buzzer ring)



Steering wheel

When the forklift is moving, use your left hand to hold the steering wheel handle ball to operate. During the exercise, hold the steering wheel handle ball and do not let go.

Warning

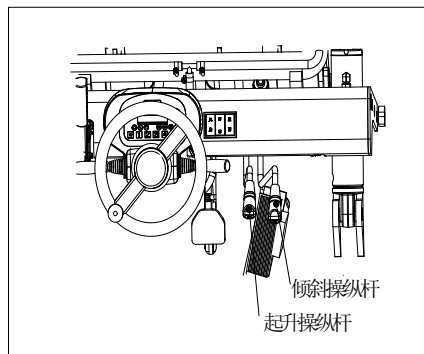
- never turn the key to the "off" position during the operation of the vehicle.
- when turned to "off", the operation of the steering wheel will become very heavy.

Horn button

Press the center of the steering wheel after the vehicle is powered on, and the horn will ring.

Brake lever

Use the parking brake to stop, pull the control lever backward, and the front wheel will be effectively braked. At this time, the LCD (○ P) indicator light will be on. When the brake is released, push the control lever all the way forward to release.



⚠ be careful

- the lifting control lever must be seated on the driver's seat and can only be operated after confirming the surrounding safety.

Lifting control lever

Pull the lever backward and the fork rises. Push forward the control lever and lower the fork. According to the operating range of the joystick, the speed suitable for operation is obtained.

⚠ be careful

- steering wheel tilt adjustment must be carried out before driving.
- push back in the direction of "a" after adjustment to make sure it is fixed.
- it can never be adjusted during operation.

Tilt lever

be careful

The tilt lever must be seated in the cab seat and operated only after confirming the surrounding safety.

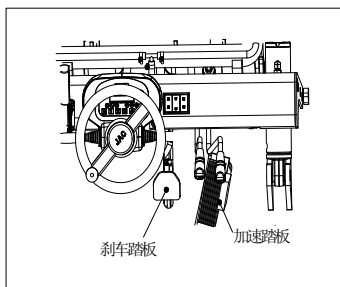
Pull the lever backward, and the gantry will tilt back. Push the lever forward and the gantry will tilt forward.
According to the operating range of the joystick, the speed suitable for operation is obtained.

notes

When the key switch is set to "off", the gantry will not tilt forward even if the lever is pushed forward.

pedal

From left to right, brake pedal and accelerator pedal respectively.



brake pedal

Press the brake pedal, the vehicle is braked, and the brake light is on at the same time.

Be sure to press the brake pedal after the foot leaves the accelerator pedal.

Accelerator pedal

Adjust the vehicle's travel speed freely according to the depth of the pedal.

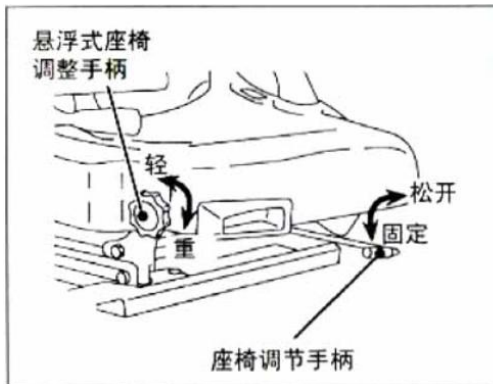
Turn the key switch to "on", operate the direction shift lever and then press the accelerator pedal.

The driving speed of the vehicle is displayed by the number of the LCD (semi AC, AC fork).


Instrument display interface

The instrument interface displays the real-time running kilometers and electric quantity display

Main part



Suspended seat


 be careful

Handle adjustment shall be carried out before operation. Adjustment in operation is very dangerous.

The comfortable position of the seat can be adjusted according to the weight of the driver.

Turn the adjusting handle and adjust it to the proper position to make the impact and vibration of the vehicle absorbed and comfortable.

Seat adjustment handle

 be careful


The seat position shall be adjusted before operation and locked after adjustment.

By adjusting the handle, the position of the seat can be adjusted to be suitable for the body of the operator.

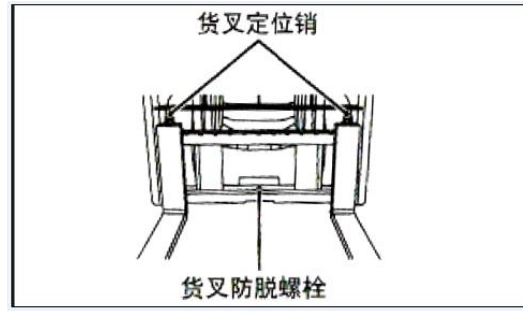
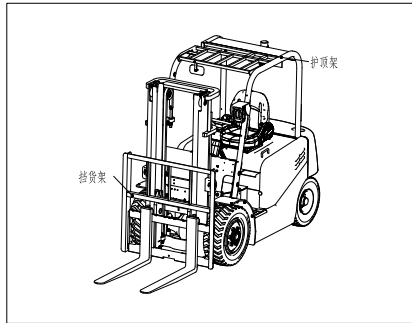
Pull the handle upward in the direction of the arrow, and the fixation will be released.

After adjustment, the seat can be easily moved back and forth to confirm whether it is locked.



 warning

Please fasten your seat belt. If it is not installed, the driver may be thrown out in case of rollover.



Roof overhead

warning

The roof support is an important part to prevent the upper objects from falling and protect the operator's safety. It is very dangerous to use after installation, removal and transformation, which will lead to major accidents.

Storage rack

be careful


It is very dangerous to use after installation, removal and transformation.

The storage rack is an important safety part to prevent the goods loaded on the fork from sliding to the operator.

Fork lock pin

The fork lock pin is used to secure the fork.

Pull the handle on the fork locating pin up slightly and rotate it by 90 ° and unlock it to adjust the fork spacing. Adjust the fork spacing according to the size of the goods.

 **be careful**

- according to the principle that the center of gravity of the goods should be consistent with the center of the vehicle, the spacing of the forks should be adjusted to the left and right equally.


After adjustment, fix the truck with fork locating pin to make it unable to move.

- when adjusting the spacing of freight cars, lean your body on the shelf, stand firmly, and push the freight cars with your feet. Never adjust by hand.

Prevent the fork from falling off the bolt

When the fork on one side is used in the center of the fork rack, the fork will fall off.

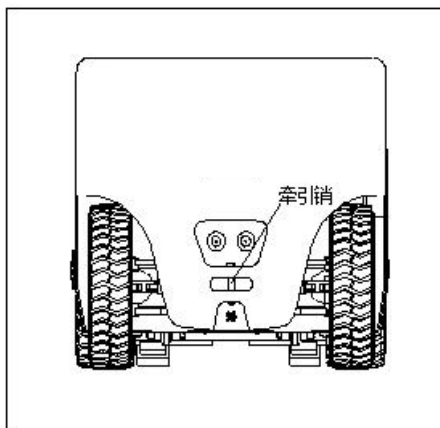
The bolt can make the fork no longer be used in the central position of the fork frame.

 **be careful**

Do not remove the bolt except as follows to prevent the fork from falling off the fork frame.

- when removing the fork.
- when the left and right forks must be closed in the center due to operation needs.

Towing pin



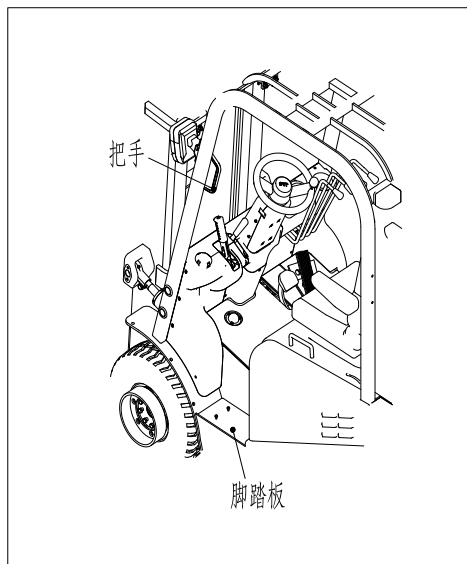
be careful

Never use for towing or being towed.

The towing pin is only used in the following situations:

- it is used to get out of trouble when unable to drive.
(e.g. tire gets into side ditch, etc.)
- when the vehicle is to be loaded or unloaded from the truck for transportation.

Pedal, handle



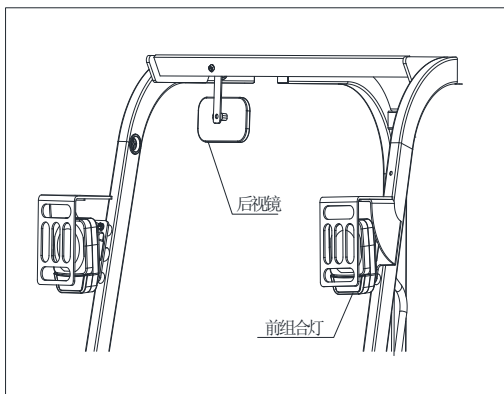
A foot pedal is arranged on the left side of the front of the body, and a handle is arranged on the front strut of the roof guard. When getting on and off, use the handle and foot pedal to ensure safety.



be careful

Get on and off the driver's seat, use the on and off handle and foot pedal to ensure safety.

Lamps, rear-view mirrors



⚠ be careful

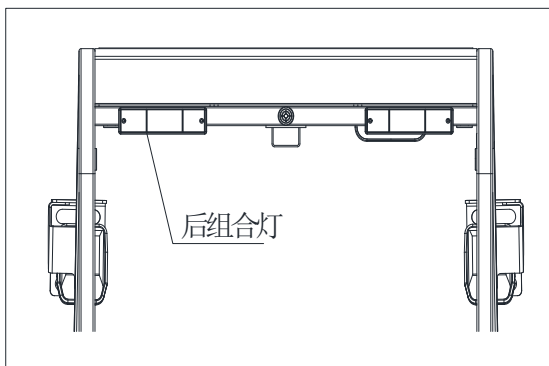
Confirm the working condition of the lamp. If the bulb is burnt out and the lampshade is damaged or unclean, replace or repair it immediately.

Front side

Install front combination light (direction indicator light, width indicator light).

Rear side

The rear combination lamp is installed on the rear side of the vehicle, including tail lamp, brake lamp, reversing lamp and direction indicator lamp

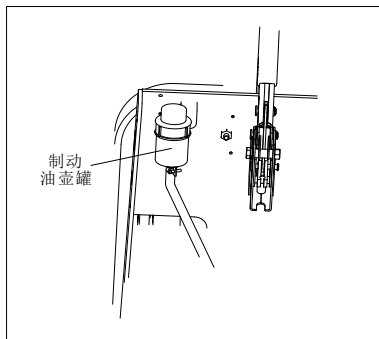


Rearview mirror

⚠ be careful

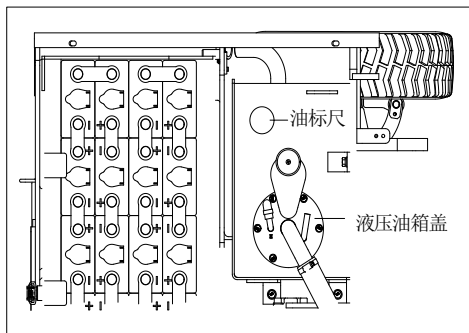
- when reversing, face to the rear for confirmation. Do not rely solely on the rear mirror to reverse.
- the rear view mirror shall be kept clean.
- adjust the rear view mirror to a position where you can see the rear well.

Brake reservoir



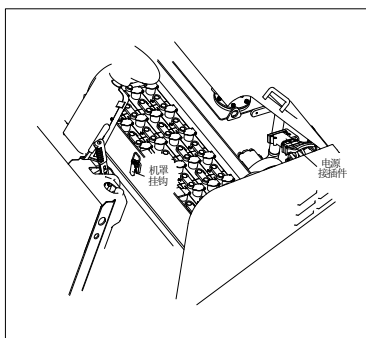
It is installed on the left side of the steering column and under the instrument frame.

Hydraulic tank cap



When the hood is open, the tank cover can be seen on the right rear side.

A scale is installed on the right side of the oil tank cover to check the oil quantity for spot check and supply by.



Power connector

be careful

- when contacting internal electrical parts by hand, the battery plug must be pulled out to prevent danger.
- even if the key switch is in the "off" position, there is still voltage in the main circuit.
- when the vehicle is running, it can not be turned when the battery plug is pulled off, and it is absolutely not allowed to pull off the battery plug unless it is not allowed.

The power connector is used to connect or disconnect the battery and vehicle electrical components. It is usually used by connection.

Options

Here are some options that have a deep relationship with safety.

Please contact Yufeng for details of the conditions under which the selection is effective.

notes

- when unplugging the power connector, please turn the key switch to the "off" position.
- when connecting the power connector, please confirm whether the key switch is in the "off" position.

Rear work lights

be careful

In case of insufficient brightness required for safe operation, please equip the rear operation lamp.

When the rear work light is used for night work, it will illuminate the rear road surface, so as to confirm the obstacles on the road surface.



Solid tyre

Avoid using when there are iron chips on the road that may cause tire air leakage.

Notes

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In this book, there are the following precautions.

In order to protect the vehicle ownership and the safety precautions of the operator, please strictly observe and implement.

Operation, spot check and maintenance shall not be carried out unless the vehicle is well known.

All terms and symbols used in this book and on the vehicle nameplate have the following meanings:

signal	The consciousness of symbols
 danger	A symbol indicating that it is very easy to cause death and injury accidents and must be observed
 warning	Indicates a symbol that can lead to the occurrence of a fatal accident and must be observed.
 careful	A symbol that must be observed in order to cause death, injury, damage to the vehicle and surrounding objects.
 note	A symbol that has nothing to do with accidents and faults, but is expected to be familiar in order to extend the service life of vehicles.

In order to maintain good performance, safe use and economic operation of your vehicle, here are some precautions for correct driving operation.

New car use

The service life of your vehicle depends on the use of your new vehicle.

During the first 200 hours of operation, please pay attention to the following matters.

No matter what season, heat engine must be operated before operation.

Spot check, think of it.

Don't operate it roughly. Don't use it irrationally.

Add lubricating oil, grease and change oil in time.

Load and vehicle stability

The forklift is supported by the front wheel, and it relies on the rear balance to balance the rear weight and cargo weight, just like a seesaw. Therefore, in order to break the balance, we must pay attention to the center of the goods.



If the weight exceeds the specified value, the rear wheel will be off the ground and there is a risk of tipping forward. And the more forward the center of the goods is on the fork, the heavier the goods are. The weight of the corresponding goods will have to be reduced.

Load center and load capacity

be careful

- when loading and driving, the goods shall be lifted 15-20cm away from the road surface, and the gantry shall be tilted back in place.

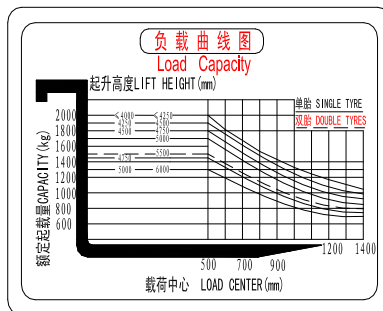
- the load capacity of vehicles with accessories is smaller than that of standard vehicles.

Vehicles with tilting forks, flat holding clamps, rotating clamps and other accessories have less allowable load than standard vehicles (vehicles without accessories).

When the vehicle needs to be equipped with accessories, the allowable load value of the load plate must be strictly observed, which must not be exceeded.

The reasons are as follows:

- 1) The weight of the accessory shall be reduced.
- 2) The thickness of the appliance moves the load center forward and reduces the load.



The distance from the fork root to the cargo center is called the load center. For example, the above figure shows the relationship between the load center of a 2T forklift and the weight (allowable load) of the cargo that can be loaded, which is called the load curve, nailed to the vehicle.

Forklift stability

The stability of the forklift can be ensured under the conditions of use. But stability is not guaranteed under all conditions.

The service conditions are as follows:

- the place of use is flat and firm road surface or ground.
- driving under standard load state or standard no load state.
- during loading and unloading, the goods shall be based on the level, and shall not incline if not necessary. In addition, the lifting operation shall be carried out slowly.

In addition, keeping the vehicle in good condition is a necessary condition to ensure safety.

Standard no-load state when driving

The upper surface of the fork is 30cm from the ground, and the gantry is tilted back in place without load.

Standard load state when driving

There is rated load on the standard load center, the upper surface of the fork is 30cm from the ground, and the gantry is tilted back in place.

Driving on the ramp and starting off

On a ramp, make the goods uphill or downhill.

When the goods are not loaded, make the counterweight upward and downward. In this way, the drive wheel (front wheel) can avoid slipping.

Forklift


ransportation

be careful

When transported by truck

- in order to prevent the forklift from moving in the car, stop the wheels and completely fix the forklift with ropes.
- when loading, unloading and transportation on the road, pay attention to the full length, full width and full height, and comply with relevant laws and regulations.

Precautions for loading and unloading

 be careful

To prevent danger, please do not change direction or move horizontally on the approach slab.

Please use the approach slab with sufficient length, width and strength.

Effectively pull on the parking brake of the truck and stop the wheels.

The approach Board shall be firmly fixed in the center of the car, and there shall be no grease on the approach board

The left and right height of the approach slab shall be the same, so that the vehicle can run smoothly during loading and unloading

When loading the forklift onto the train, in order to board the left and right tires on the approach plate at the same time, slowly reverse the vehicle.

Forklift operation

Get on / off

- 1) Make sure the front and rear of the vehicle are safe.
- 2) From the left side of the vehicle, use the running board to get on and off the handrail.

 **be careful:**

Please don't get on or off with your hands on the steering wheel or hood.

This may cause unexpected accidents due to slipping and falling.

- 3) Fasten your seat belt.

This is to protect your own safety spare parts in case of rollover.

Before the vehicle starts

be careful

Before starting the vehicle, use your eyes to confirm the surrounding safety, and use the horn to send out the starting signal.

- 1) Pull up the lifting lever to make the fork 5-10cm above the ground.
- 2) Pull the tilt lever backward to allow the gantry to tilt back into place.
- 3) In this state, pull back the tilt lever to keep the fork 15 ~ 20cm from the ground.
- 4) After confirming the safety around the vehicle, press the horn to start.

Travel

be careful

When the shift lever is turned to the forward "F" (or backward "R") position, the brake pedal must be fully depressed.

notes

Do not keep your foot on the brake pedal for driving after the vehicle starts.

- 1) Press the brake pedal.
- 2) Switch the shift lever to the forward "F" (or backward "R") position.
- 3) Release the parking brake.
- 4) With your foot off the brake pedal, press the accelerator pedal to start.
- 5) The speed of the vehicle is controlled by how much the accelerator pedal is pressed.

⚠ be careful

- even if the key switch is turned to "on", it will take about 1 second from the start of the brake circuit to the start.
- when the key switch is turned to the "on" position, even if the shift lever is placed at the forward "F" (or backward "R"), it cannot start. At this time, return the shift lever to the middle position "n".
- if the accelerator pedal is pressed rapidly, the vehicle may accelerate rapidly, please pay attention to it.

⚠ be careful

When driving in reverse, you must look at the rear, directly confirm the safety of the rear, and only rely on the rear-view mirror to reverse

Steering

⚠ be careful

When turning, the rear of the vehicle (balance weight) will deviate significantly outwards.

Forklift is not the same as the general car, for the rear wheel steering, when turning, the rear of the vehicle will be significantly out. When turning, reduce the driving speed in advance, and turn earlier than the car, and turn the steering wheel in the direction to be turned.

- hold the steering wheel handle with the left hand for operation.
- operate the operating lever of the lifting system with the right hand.



- before turning, reduce the speed to about 5km / h. After confirming the safety of front and rear, turn the steering wheel smoothly and turn slowly.
- conduct this operation when steering channel, right angle channel, etc.

⚠ warning

In the case of turning, the faster the driving speed and the smaller the turning radius, the more easily the vehicle will overturn. Please pay attention.

Simultaneous operation of driving and lifting (inching operation)

- 1) First, drive the front end of the fork close to 3-5M of the cargo.
- 2) Fully depress the brake pedal. (travel stop)
- 3) Press the accelerator pedal to get the proper working speed.
- 4) Operate the lifting handle to lift the fork

- simultaneous operation (inching operation) of driving and lifting is a highly skilled operation. It is necessary to correctly understand the shape, center of gravity and other characteristics of the goods, confirm the stability of the rear vehicle, and carry out the lifting operation of the fork at low speed. Please pay attention to the operation at the same time.
- tilting operation when lifting is very dangerous. Please do not operate the goods on the pallet except for the in and out operation of the fork.
- in order to reduce the risk of high lift driving, the lifting operation shall be carried out when it is very close to the pallet.

Slow down

Slowly release the accelerator pedal with your foot. The brake pedal can be pressed as required.

If it is not an emergency brake, release the accelerator pedal and slowly slow down until it stops. However, even if the accelerator pedal is released rapidly, emergency braking cannot be generated.

In case of emergency, press the brake pedal to form emergency braking.

Temporary parking

be careful

Safe parking

The parking space should be as wide and flat as possible.

When the no-load vehicle has to stop on the slope, the door frame of the vehicle will go down to stop the wheel from moving.

- stop in a safe place or designated place outside the work site, and use attention signs and signal lights when necessary.
- stop the vehicle on a very hard road and pay attention to prevent sliding and sinking.

When the fork cannot fall down due to vehicle fault, the fork tip of the fork shall be hung with cloth, and the direction shall be towards the side where people and vehicles are not passing.

- pay attention to the skid and collapse of the road surface.

When the vehicle stops completely, lowering the fork is very dangerous.

Don't jump out of the car.

When getting off the vehicle, you must face the direction of the vehicle and use the pedal to get off.

- 1) To decelerate, press the brake pedal to stop the vehicle and shift the shift lever to the middle position "n".
- 2) When parking, stop at a place that does not obstruct other vehicles. Please do the following operations:
- 3) Pull the parking brake handle in place to make the parking brake act.
- 4) Lower the fork to ground.
- 5) Turn the key switch to "off".
- 6) Remove the key and keep it.
- 7) Get out of the car. Be very careful when you get off.

Road condition

be careful

- be careful when driving on uneven roads.

When passing through the railway crossing, you must stop first to confirm whether the left and right sides are safe.

- obstacles such as stone tablets, wood, bumps, etc. should be bypassed. If you can't bypass the obstacle area, drive carefully at low speed, and choose the place where the lower part of the vehicle can't touch the obstacle. When crossing the small steps, if the road is abundant, go diagonally.

From the forklift structure, the road conditions, the speed limit is not only the above.

Operation of snow road and frozen road

When running on snowy or frozen roads, skidding or sideslip will occur, so it is very dangerous to accelerate, brake, turn and operate rapidly.

Very carefully rely on the addition and subtraction accelerators to control the speed of travel.

Matters needing attention in the use of battery

DANGER

How to use the battery

The battery will produce combustible gas, which may cause explosion and other serious consequences.

- it is strictly prohibited that the fire = short circuit, electric spark and cigarette are close to danger.

The liquid volume is insufficient = the liquid level is lower than lower lever, which may cause combustion and explosion.

- pay attention to ventilation = it is very dangerous to have insufficient ventilation during use or parking.

Avoid electric shock = wear rubber gloves during maintenance and spot inspection.

Prevent static electricity = do not clean with non cotton cloth and dry cloth.

Pay attention to the electrolyte = the electrolyte is dilute sulfuric acid, which is dangerous to the skin, eyes and clothes (burn, blindness, etc.)

- when splashed into the eyes = wash with plenty of water directly, and then receive the doctor's treatment.

warning

Battery charging

- in order to prevent electric shock accident, the ground wire at the power supply side of the equipment shall be connected properly.
- in order to prevent electric shock, do not put your hands or other things into the machine.

When the power switch is on, it is very dangerous to plug in the power head.

The charging place should be in the designated place with rainproof, low temperature, good ventilation and no combustibles.

During charging. Electrolyte may drop to the ground. Therefore, the ground should be acid resistant and easy to drain.

During battery charging (especially at the end of charging), explosive gas will be produced, which is very dangerous. Do not let cigarette and other fire sources approach.

The hood of the vehicle shall be fully opened.

Do not pull out the battery plug and power plug during charging. It will not only cause insufficient charging, but also cause electrical sparks, which is very dangerous.

Due to mechanical failure, special power supply equipment such as fuse with specified capacity and fuse free automatic circuit breaker must be used.

be careful

At the beginning of charging, when the electrolyte temperature exceeds 40 °C, the charging will be stopped temporarily.

When the electrolyte temperature exceeds 50 °C during charging, the battery life will be adversely affected.

Do not charge at low temperature. Charging in freezer and outdoor in cold area will shorten the service life of battery.

Over discharge and equal charging are the reasons for the rise of electrolyte temperature. Please note that the service life of battery will be shortened if the electrolyte temperature exceeds 50 °C.

Please use a charger that is suitable for the capacity of the battery. Use the charger that is not corresponding to the battery capacity or use it for other purposes, which is the cause of the fault.

The vehicle and electrical department must not spray electrolyte.

Daily charging

When the warning of low battery voltage is displayed on the LCD after the termination of operation (after discharge) and during operation, when the residual capacity of the battery is less than 20%, charge according to the following essentials.

And the charging time varies according to the battery capacity and discharge time, discharging 75 ~ 100%, continuously charging for 8 ~ 13 hours.

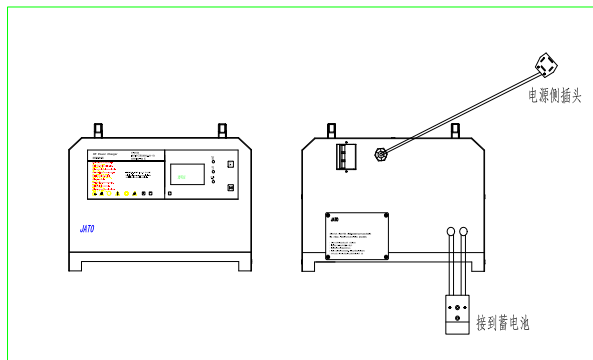
Note

The battery capacity displayed by the charging monitor may not be consistent with the actual battery capacity.

be careful

The charging place should be ventilated and rain proof, and there should be no fire around.

- 1) Turn the key switch of the vehicle to the "off" position.
- 2) Make sure the power switch of the device is on "off".
- 3) The hood of the vehicle should be fully opened.
- 4) Open all the liquid filling caps on the battery unit, and observe whether the electrolyte height is normal. If it is low, please add distilled water before charging.



- 1) Pull out the plug of the battery socket.
- 2) Connect the charger input plug with the power grid socket firmly

be careful

It is necessary to distinguish the matching between charger plug and grid socket, such as grid voltage level, three-phase four wire system, etc

- 1) The output socket of charger is reliably connected with the power plug at the battery end.
- 2) Switch "on" of equipment power supply and "on" of charger.
- 3) The charging indicator light on the charger operation surface is on, and the charging starts. At this time, you can hear the operation sound of transformer "bang".

Note

- 1) During the charging process, please observe whether the charger control panel indicates normal. If the fault wrench indicates red, please charge after troubleshooting.
- 2) Charging percentage indication on charger panel, please do not disconnect charger when "100%" is not reached, as it is easy to damage the battery.

10) 8-13 hours after the start of charging, the charger will stop automatically at the end of charging, and the "charging" indicator is off. Charging time varies with battery discharge.

11) After charging, make sure that the "charging" indicator on the charger operation control panel is off, turn off the switch on the device side, and then unplug the charging connectors.

Note

When pulling the plug, pulling the cable will cause wire breakage. Therefore, hold the plug body and pull it out.

12) After charging, confirm whether the specific gravity of the battery rises to the same value in the table below before using the vehicle.

Liquid temperature	proportion
10°C	1.287
20°C	1.280
30°C	1.273
40°C	1.266

13) Do not pull off the plug during charging.

If you have to pull it out, please do it in the following order.

1. Press the stop button.
2. Set the power switch of the equipment to "off".
3. Pull off the plug.

warning

During charging, never touch the inside of the machine with your hands when the charging cable is plugged in.

In case of no alternative, be sure to stop the charger, unplug the charging cable and release the battery plug.

be careful

Grounding.

The grounding of the plug-in at the power supply side of the equipment must be effectively connected with the earth. If it is not fully connected, electric shock will occur.

Equalizing charge

The battery should be charged once a month.

However, in this case, please manually operate the equalizing charge.

During the charging process, press and hold the equalizing charging button, and the equalizing charging indicator light will be on,

The equalizing charging time is about 2 hours.

"Stop" interrupt can be used during charging

Electrolyte quantity of battery

The electrolyte of the battery must be kept above the specified level.

When charging, water is reduced due to water decomposition and natural evaporation.

Note

When the electrolyte is used when the electrolyte is reduced to below the specified amount, the plate will be vulcanized and the battery life will be shortened. At this time, distilled water must be added.

Make up water is carried out before charging, and the replenished water can be well mixed with the electrolyte by charging.

Spot inspection of electrolyte quantity

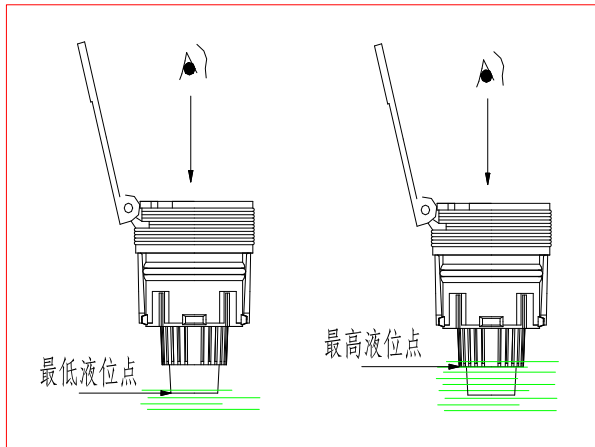
Warning

If the liquid level of the storage battery is below lower level, it will easily lead to the deterioration of the plate and explosion of the battery.

Please do not use open fire for spot inspection of electrolytic liquid level.

It is easy to cause fire and explosion.

Open the liquid filling cover, look down at the filling hole, and observe whether the electrolyte level is at the highest level of electrolyte.



Sequence of electrolyte replenishment

be careful

Excessive distilled water will cause battery leakage.

Make up water should not exceed the maximum liquid level.

Open the liquid filling cap, add distilled water with the attached funnel, and add distilled water until the highest liquid level is above

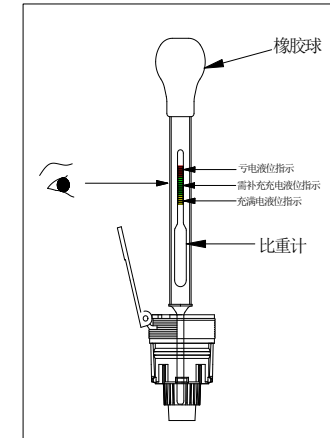
Electrolyte specific gravity and temperature correction

The specific gravity of the electrolyte changes with the temperature of the liquid. When measuring the specific gravity, the liquid temperature should also be measured, and then converted into the standard value according to the specific gravity conversion table.

The reference specific gravity at the end of charging is 1.280 at 20 °C.

Reading of hydrometer

Voltage	determine	handle
Monomer above 2.1V	normal	
Monomer 2.09v ~ 1.9V	Insufficient charging and power shortage	Supplementary electricity
Monomer below 1.9V	Serious power loss or failure	Check again after charging

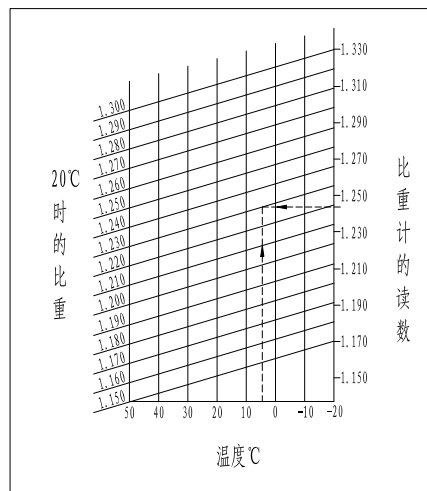


Determination and treatment of electrolyte specific gravity

Unit voltage judgment and treatment:

Specific gravity value (25°C)	determine	handle
1.300 above	The specific gravity is too high, adding liquid is wrong	Adjust specific gravity with pure water
1.25~1.28	good	
1.20~1.25	Insufficient charge	Supplementary electricity
1.20~1.1 below	Serious power loss or failure	Check again after charging
Each cell is inconsistent, and the difference is more than 0.04	Maybe there is something wrong with the single grid	Check again after charging

Specific gravity conversion table



Load

- 1) In order to ensure good lateral stability, the transverse spacing of forks should be as large as possible.
- 2) When the fork is inserted into the pallet for loading and unloading, the forklift should be aligned with the cargo.
- 3) Forks must be inserted parallel to the pallet.
- 4) The fork should be fully inserted to the root of the fork.
- 5) When the fork is lifted off the ground:
 - ① When the fork rises 5-10cm from the ground at a time, confirm whether the cargo is safe and whether the load is unbalanced relative to the fork.
 - ② After confirming that there is no abnormality, the gantry tilts back to the right position, the fork rises 15-20cm away from the store, and then starts and drives.
- 6) When handling very high goods, poor vision ahead, backward driving.

be careful

The distance between forks is determined according to the goods loaded, equivalent to more than 1 / 2 and less than 3 / 4 of the standard pallet.

堆垛

- 1) When approaching the stacking site, the forklift is lowered to a safe speed.
- 2) Stop the forklift in front of the stacking area.
- 3) Confirm that the stacking site is safe.
- 4) The gantry is tilted (forward) to the vertical position.
- 5) The fork is raised to a height just above the stacking position.

be careful

When stacking goods on a solid platform or rack, the goods are in a high position, and the goods are not allowed to be tilted.
Never leave the forklift when the goods are in high position.

- 6) Confirm the position where the goods should be placed, advance at a low speed and stop at a proper position.
- 7) After confirming the stacking position, it should be lowered slowly and stacked safely.
- 8) Don't let the fork catch the pallet or cargo, and back up the vehicle after confirming the safety.
- 9) After the fork tip leaves the pallet or cargo, lower the fork to the driving position (15-20cm above the ground).
- 10) The gantry inclines backward.

Destacking

- 1) When the destacked goods are in front, reduce to safe driving speed.
- 2) When approaching the goods (the front section of the fork is about 30cm away from the goods), stop the forklift temporarily.
- 3) Make sure the goods are not in danger of dumping.
- 4) Tilt the fork (forward) to the vertical position and lift to the pallet or rack Jack.
- 5) After confirming the position of fork insertion, align it and move forward slowly to stop the forklift after the fork is safely inserted.

When the fork cannot be inserted safely, operate according to the following points:

- ① When the forklift moves forward, insert the fork to 3 / 4 degree, lift it slightly (5-10cm), and then put the tray or rack back 10-20cm, and then drop the gantry.
- ② Drive forward again to fully insert the fork.
- 6) The fork is slightly raised after insertion (5-10cm).
- 7) After confirming the safety of the rear and the place where the goods should be placed, back up safely.
- 8) Through the lifting operation, the goods are 15-20cm above the ground, and the gantry is tilted back in place, and then transported to the destination.

Before vehicle storage

be careful

Small faults are the hidden danger of major accidents. Even if you feel a little abnormal, you should also report to the manager. Never operate the operation before the repair is completed.

- Before storage, it is very important to clean and check all parts of the vehicle according to the following requirements no matter when it is used in the future.
- Use vess to clean the oil and dirt outside the vehicle. If it is very dirty, clean it with water.
- When washing the car, spot check the abnormal parts of the vehicle appearance (bumps, cracks, etc.) and tire scars.
- Check for oil leakage.

Inspection and supplement of lubricating grease for each part.

Check whether the locking connection of piston rod of each oil cylinder is loose.

Whether the rotation of gantry roller is smooth.

The fork is lifted to the top and then dropped to oil the internal part of the lifting cylinder.

Long term storage

In addition to the regulations of "before entering the warehouse" and "daily storage", the following procedures and inspections shall be carried out:

- Considering the influence of rainy season, park the forklift on high hard ground.

Remove the battery from the forklift.

- If the forklift is parked indoors and it is hot or humid, the battery should be stored in a dry and cool place. The battery should be charged once a month.
- The exposed parts such as oil cylinder, piston rod, sliding shaft, etc. which are easy to rust shall be coated with anti rust grease.

Cover easily wet parts, such as exhaust port and air cleaner.

- The forklift should be operated at least once a week, start the engine and fully warm up the engine, and drive the forklift back and forth for a certain distance.
- Avoid parking the forklift on an unsound ground, such as asphalt pavement in summer.

Use of forklift after long term storage

- Remove moisture-proof covers.

Remove the rust proof grease of exposed parts.

- Discharge the foreign matters and water mixed into the hydraulic oil tank and fuel tank.
- After the battery is charged, install the forklift and connect the battery connector.

Carry out spot check before work.

Do not flush the vehicle and battery with water

- Avoid washing the oil pipe, steam filter and other parts in the vehicle with water. As a last resort, the parts below the tire can be washed. In addition, the front floor plate can be removed for flushing. In this case, either do not put it on the bridge body or remove it from the bridge body.
- When adding water to the battery, impurities will enter the battery from the filling port, which will seriously affect the life of the battery. What's more, washed acid water can pollute the environment. After the battery is dirty, please blow it with air and clean it with a clean cloth. If you can't, ask a professional to complete it.
At this time, take out the battery and install it into the vehicle after the battery water is completely cleaned.

Do not flush electrical devices with water

- Controller and contactor
- Motor (walking motor, pump motor)
- Battery connector
- Instrument housing
- Acceleration device (on the front floor)

Essentials of car washing

- Stop and pull up the parking handle.
- Turn the start key to "off" and pull out the battery socket.

After washing the car

- Use compressed air to blow off the moisture, so that the vehicle is fully dry.
- Make a trial run before use to confirm whether there is any abnormal phenomenon.

List of car washing parts

Position	Is it washable	Remarks
Body surface, gantry, fork, tire, rear axle	yes	Prevent water from entering the parts.
Counterbalanced weight	yes	There is a controller in the counterweight cover. Do not flush the joint between the counterweight cover and the counterweight directly with water.
Inside the side cover	yes	Do not let water in the side cover.
Front floor plate, front pedal	no	As the lower part is equipped with electrical parts, it is forbidden to wash them. Please blow them with air. When it is very dirty, take it down and wash it with water, and then put it on after it is fully dried.
Hood, battery	no	Clean with compressed air and cloth
Instrument, steering wheel	no	Clean with compressed air and cloth
Motor	no	Clean with compressed air and cloth

4. Spot check Content





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This book has the following notes.

In order to protect the safety of vehicle owners and operators, the precautions must be strictly observed.

Unless you have a good understanding of the vehicle, you must not carry out operation, spot inspection and maintenance.

The meanings of the terms and symbols used in this book and on the vehicle name plate are as follows:

A symbol indicating the degree of danger	The consciousness of symbols
 danger	It is a symbol that can easily lead to death and injury accidents and must be observed
 warning	It refers to a symbol that can cause death or injury and must be observed.
 warning	It refers to a symbol that can cause death, injury, damage to vehicles and surrounding objects, and must be observed.
 remark	A symbol that has nothing to do with accidents and malfunctions, but is expected to be familiar with in order to extend the service life of vehicles.

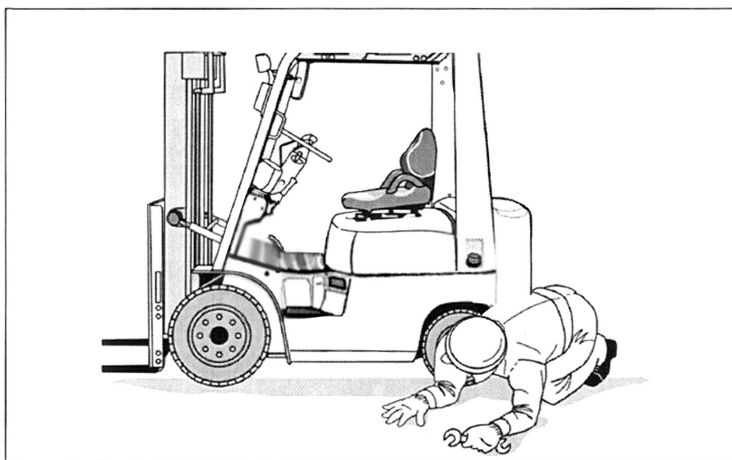
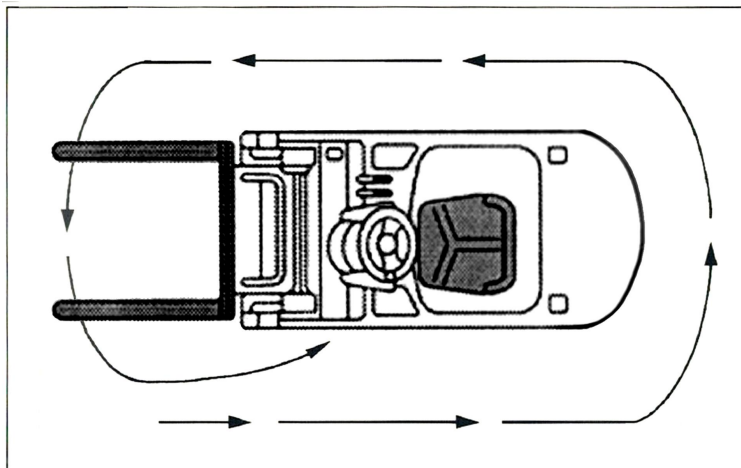
In order to work safely and maintain the performance of vehicles, as a management method, the following items must be checked before operation every day.

warning

- in case of any abnormality during the spot inspection, it is necessary to put up a sign that forbids operation. First, remove the key and report to the manager. Decide not to operate the forklift before the repair is finished.
- vehicle oil leakage may cause fire.
- improper treatment of the replaced waste oil (discharged into the sewer, soil, combustion, etc.) will pollute water, soil, atmosphere, etc., which is prohibited by law.

Checking Notice

- When replacing parts, be sure to use pure Yufeng parts.
- Make sure to use pure Yufeng grease.
- Before adding oil and grease, clean the oil cap or nozzle with a brush or cloth.
- When refueling and checking the fuel quantity, please place the vehicle on the level ground.
- The spot inspection should be carried out reasonably and the Department will be injured.
- When checking the electrical device, please remove the terminal of the battery.
- During the spot inspection under the rising fork, in order to prevent the fork and inner gantry from falling down, put wood blocks under it.
- report to the manager as soon as the abnormal phenomenon is found during the spot inspection, and the vehicle that has not been repaired
- decides to prohibit operation.



■ Around inspection

Before driving, turn around the vehicle to check whether the car body and tires are abnormal.

■State of vehicle

Whether or not to which side.

If there is tilt phenomenon, the tire or other parts in contact with the ground may fail, please contact Yufeng's designated repair factory.

■Spot check under the vehicle

Check whether there is water or oil leakage on the ground where the vehicle is parked.

In case of any abnormality, please contact the maintenance manufacturer designated by Yufeng.

Spot check content

1 Abnormal parts of the day before yesterday

Warning

Do not use vehicles that have not been repaired

Please check whether the abnormal parts in the previous day's operation have been completely repaired.

2 Is the wheel abnormal

Warning

There is high air pressure in the tire of forklift truck. Please confirm whether the tire and rim are abnormal. Please fill in the standard air pressure. It must not be higher than the standard air pressure.

When using the air compressor to inflate the tire, please adjust the air pressure in advance, otherwise the air pressure will rise to the maximum pressure of the compressor. This will cause a major accident, very dangerous.

A small degree of rim bending and slight tire damage can lead to tire burst, which is very dangerous.

In case of abnormal phenomena, please contact the maintenance factory designated by Yufeng.

It is necessary to maintain the normal pressure of the tire at all times.

Remark

Low pressure shortens tire life.

When the left and right air pressure is uneven, the steering wheel vibration and direction will be aggravated.



Turn the tire valve cap to the left, and measure the air pressure with the tire pressure gauge. Adjust to the standard pressure.

Next, check the inner tube for air leakage and screw on the cap to the right.

Check the tread and side of the tire for damage and the rim for deformation or damage.

Forklift tires are used to carry heavy objects, so the normal pressure of the tires should be maintained.

Inspection of hub nut

be careful

Loose hub nuts are very dangerous.

In case of looseness, the wheel may fall off, causing the vehicle to roll over.

Check the hub nut (a) for looseness.

Even if one of them is loose, it is very dangerous. It should be screwed to the specified torque value in advance.

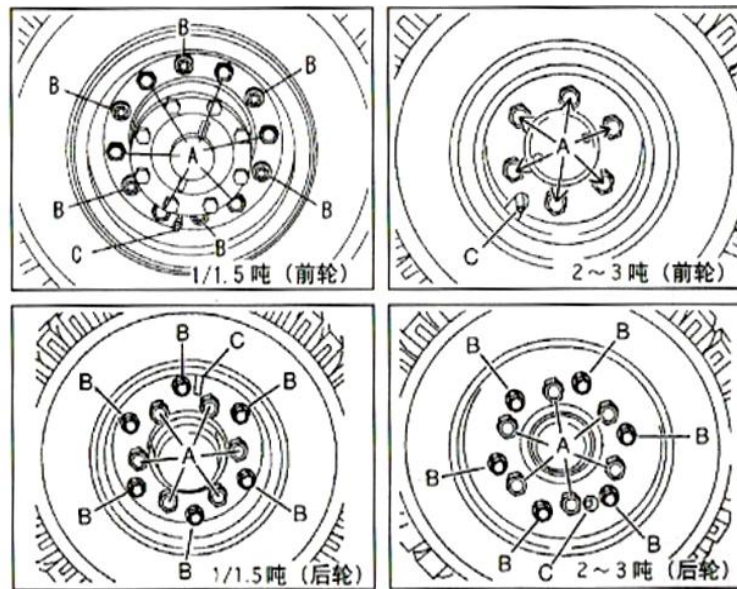
■ Tightening torque of hub nut

Model No.	Front wheel		Rear wheel	
	Wheel model	hub nut N•m	Wheel model	hub nut N•m
CPD15	6.00-10-10PR	147~172	5.00-8-10	147~172
CPD20	6.5-10		18×7-8-14	
CPD25	21×8-9			
CPD30	23×9-10			

Tightening sequence of double nuts

1,The inner nut (inside, four corner head) of the double tire hub is used to fix the rim of the inner tire, and the outer nut (outer, hexagonal head) is used to fix the outer tire rim.

2,The tightening sequence is: first tighten the inner nut to the specified torque value in a diagonal line, and then screw the outer nut to the specified value in the same way.



⚠ warning

When the connecting bolts of split rim are loose, the tire shall not be used.

The split rim is used for the rear tire. The inner and outer rims are connected and fastened by bolts (b). When the bolts are loose, the vehicle can not be used.

Immediately drain the air from the valve core (c) and remove the tire from the vehicle.

Special tools are needed to loosen or tighten the connecting bolts of split rims. It is dangerous to tighten the connecting bolts, disassemble and assemble tires and rims and inflate them. Please entrust professional manufacturers to do so. (tire disassembly, assembly and inflation must be qualified operators with special education.)

3 Spot inspection of roof guard

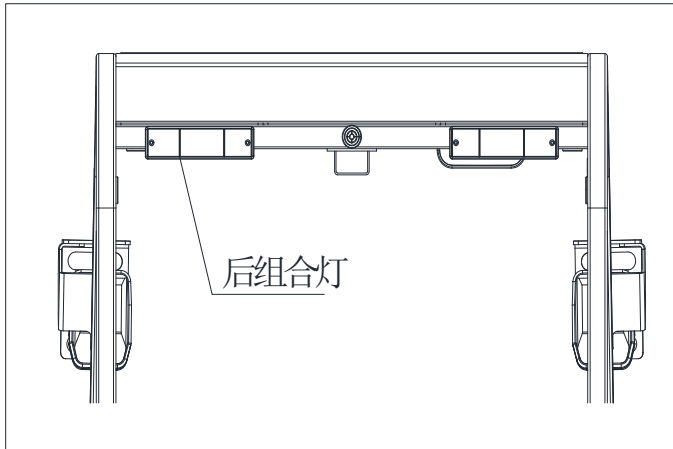
Check whether the mounting bolts and nuts of the roof guard are loose and damaged.

4 Brake fluid quantity spot check

It is not necessary to remove it. The liquid volume in the oil cup can be observed visually to check whether it is at the specified level.

5 Spot inspection of rear combination lamp

Check the lamp cover of the rear combination lamp (side lamp, turn signal lamp, brake lamp and reverse lamp) for damage and stolen goods.



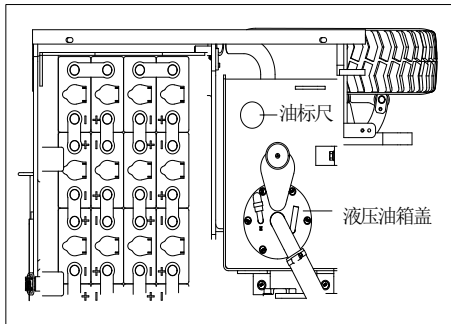
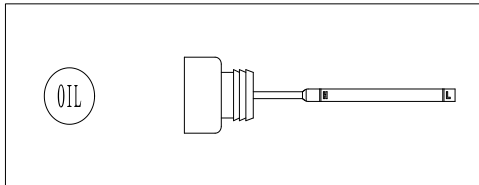
6 Spot check of hydraulic oil quantity

Check the oil quantity of hydraulic oil by vernier

First, open the hood, pull out the dipstick and wipe the oil on it with a cloth before inserting it. Slowly remove the dipstick and read the amount of oil according to the oil mark adhered to the vernier. It is normal that the oil quantity is above the scale mark, and the oil must be replenished below the scale mark.

remark

- When there is a lot of oil, there will be oil leakage.
- The oil volume is above the scale line. Please drain the oil to the normal level.
- When checking the oil quantity, the gantry is vertical, the fork is lowered to the lowest point, and the forklift is on the horizontal ground.



7 Spot inspection of oil pressure piping and oil cylinder

Check whether there is oil leakage at the oil pressure piping and oil cylinder (lifting and tilting).

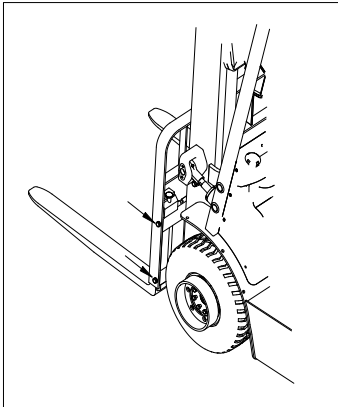
8 Spot inspection of shelves

⚠ warning

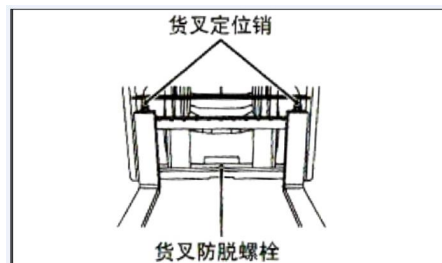
Please do not modify and remove the blocking shelf.

- If the goods fall to the operator's side, people will be injured.
- The fork sometimes falls off the fork rack.

Check whether the rack is damaged and whether the mounting bolts (2 on the left and 2 on the right) are loose and fall off.

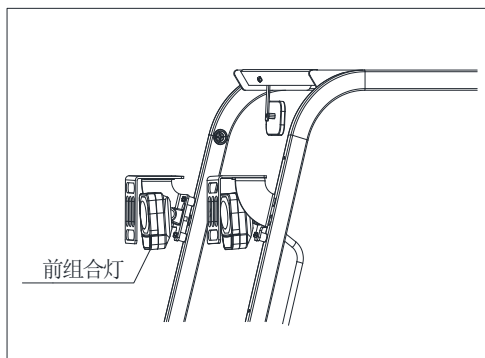
**9 Spot inspection of fork, fork positioning pin and fork bolt**

- Whether the positioning pin of the fork is in place, whether the fork is deformed or cracked, and whether the anti falling bolt of the fork is loose.



10 Spot inspection of front combined lamp

Check the front combination lamp cover for damage and dirt.



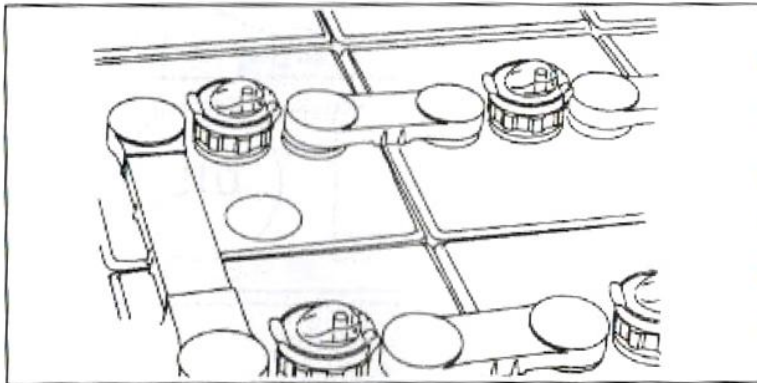
11 Spot inspection of battery electrolyte

⚠ warning

1. If the electrolyte level is lower than the standard of lower level, it is easy to cause the early deterioration of the plate and the battery may explode.
2. It is absolutely impossible to use the electrolyte for spot inspection. It is prone to fire and explosion.

Please check the electrolyte quantity of the battery.

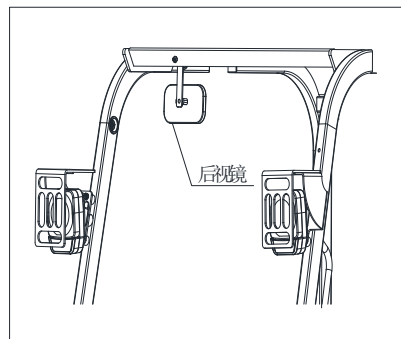
Lift the cover of the battery oil filler and confirm whether the liquid level mark is exposed.

**12 Steering wheel adjustment handle**

Get on the vehicle, step down all kinds of pedals completely, adjust the seat to this position, and confirm whether the steering wheel operation is light or not. Fix the seat and steering wheel tilt handle after adjustment.

13 Spot inspection of rearview mirror

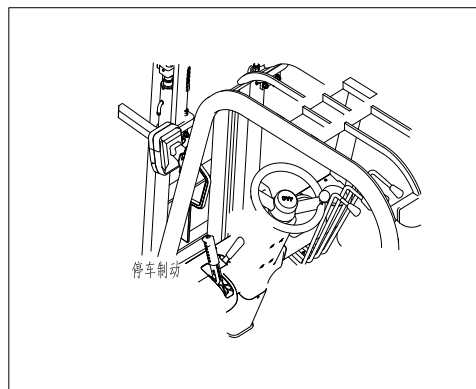
Check the rear view mirror for soiling or damage. Also, sit on the seat and adjust the rear view angle.



14 Spot inspection of parking brake

Confirm the effectiveness of the brake.

Pull the pull rod backward from the released position to the bottom, and the brake works normally.

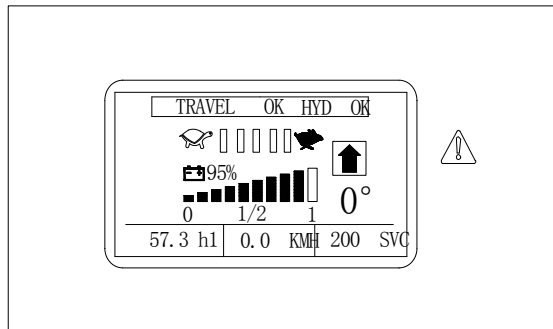
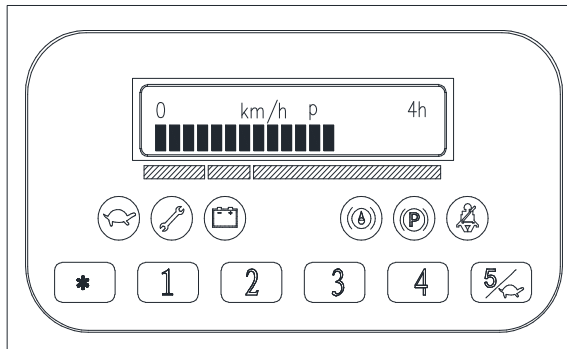


15 Spot check of control lever

Check whether the control lever (lifting, tilting, accessories) is stuck and can operate smoothly.

16 Confirmation of all display symbols of liquid crystal meter

Turn the switch from "off" to "on", and some symbols on the LCD meter can be observed.



17 Spot inspection of lamps

Operate the light switch and check whether the lamp is normal.

18 Spot inspection of direction lights

Operate the steering light handle to check whether the light is normal.

19 Spot check of horn

When pressing the horn button at the steering wheel, check whether the horn sounds normally.

20 Spot check of gantry movement

2-3 push back and pull the lifting and tilting control rods at the front and rear, and check whether the fork and gantry move smoothly and whether there is abnormal noise.

At the same time, check whether the control lever is stuck.

(for vehicles equipped with accessories, use the same method to check the accessories and corresponding control levers.)

remark

Leave the cylinder in a ready state

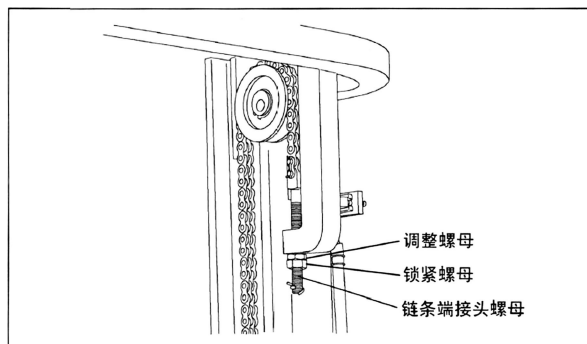
Before starting the work, let the oil cylinder move for a while, so that the seals in the cylinder can be lubricated and in the state of preparation before operation.

21 Point inspection of lifting chain tension

Lift the fork upward for 50mm and check whether the left and right tension of the chain is consistent.

If not, adjust it by the chain end joint bolt.

After adjustment, be sure to tighten the end fitting nut.

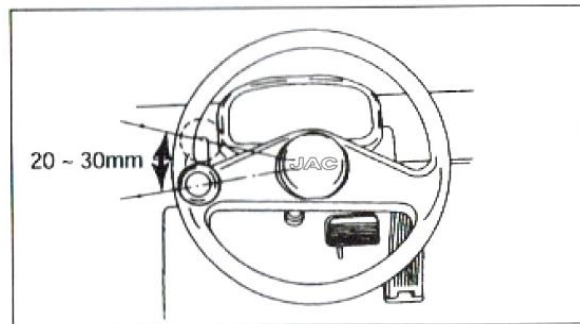


22 Spot inspection of steering wheel

Release the parking brake handle and gently turn the steering wheel to the left and right to check the clearance.

The clearance should be within 20-30. Mm.

At the same time, check the steering wheel up and down direction for sticking.



When driving at low speed (in safe place)

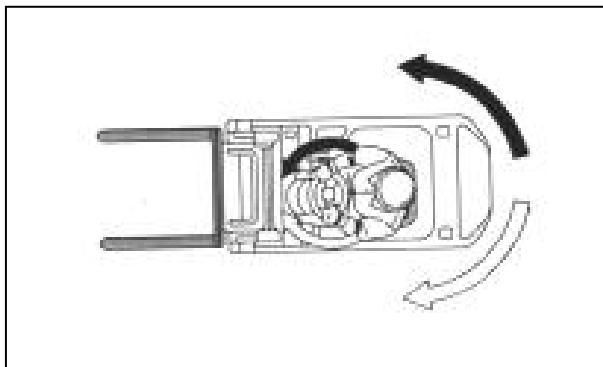
23 Brake action point inspection

When the brake acts, check whether the braking effect is abnormal and whether there is unilateral braking phenomenon.

Step on the brake pedal and check whether the brake light is on.

24 Try steering

Slow down the forklift, turn the steering wheel, and check whether the left and right steering forces are equal or there are other abnormal phenomena.




25 Parking brake point inspection

After the parking handle is pulled up, check whether the vehicle can be stopped and kept in its original position.

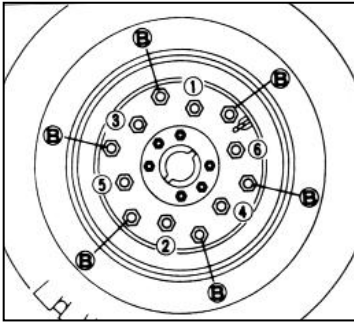
26 Confirmation of reversing lamp flashing

When reversing the switch, please check whether the reversing lights flash.

 warning



- Before taking out the tire from the rim, be sure to pull out the valve core and exhaust the air. For fabricated rims, exhaust the air before loosening the rim bolt (b) or removing the circlip.
- The assembly of tires, inner tubes, rims, aprons, etc. and the inflation of removed tires shall be completed by specially trained personnel.
- The tire pressure of forklift truck is higher than that of general passenger car. Therefore, bad parts and incomplete operation may cause accidents. Qualified personnel shall operate the inflation operation. Inflation should be carried out in a solid and safe fence.
- The rim bolts shall be screwed to the specified torque by special tools when the air is exhausted.
- When installing the assembled rim on the vehicle, the rim bolt head shall be installed outward.



Tyre replacement and tyre burst treatment

Prepare tools, jacks and other necessary tire changing tools.

Front wheel

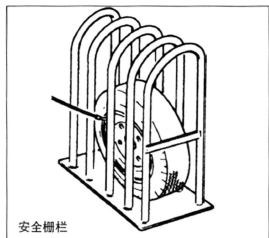
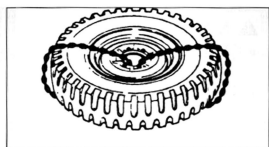
warning

When removing the tire from the vehicle, let off the air and then remove the rim bolt.

1. First, park the car on a flat and solid ground, turn off the power, but do not load.
2. Pull up the hand brake, stop the wheel from the opposite side, and install the jack under the workshop.
3. Push the tire to the point where it is close to the ground, loosen the rim nut (① - ⑥) and keep it still.
4. Continue to lift the tire off the ground and remove the rim nut.
5. Remove the tire.
6. The installation sequence of the wheel is opposite to the removal sequence.
 - **The rim bolts are tightened diagonally.**
 - **Please refer to page 68 for tightening torque of rim bolts.**
 1. After the wheel is installed, charge it to the standard air pressure.
 - Please refer to page 67 for standard tire pressure.

Rear front

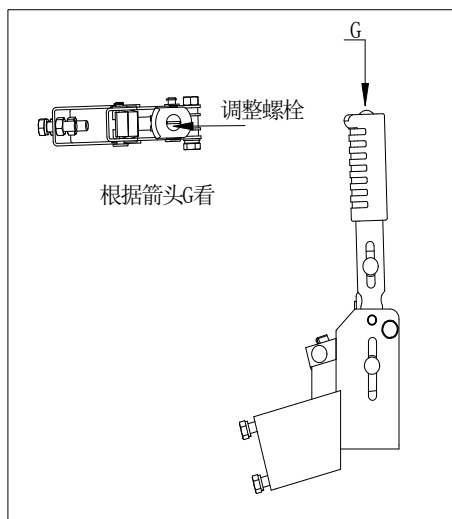
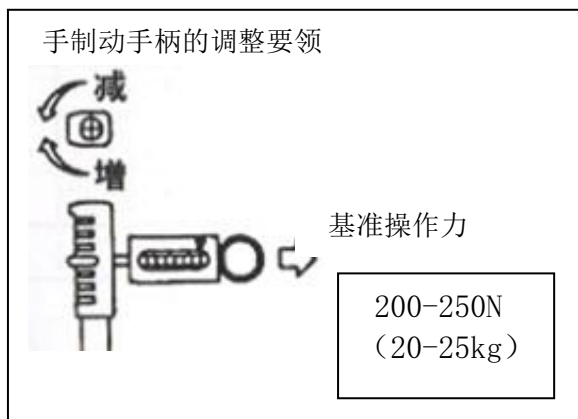
When replacing the rear wheel, Jack the jack under the balance weight, and the key points are the same as those of the front wheel.



注

- 请使用指定尺寸的轮胎和轮辋。
- 更换轮胎时, 前后轮胎一定要同时更换。

Adjustment of operation force of parking brake handle (hand brake handle)



Adjustment Essentials

1. Investigate the spring assembly operating force of parking brake handle as shown in the figure.

The standard operating force is 200 ~ 250N (20 ~ 25kg)

2. If the operating force cannot reach the standard value, please use the flat mouth to turn the adjusting bolt in the enlarged part of the figure.

Less: reduce the operating force.

Increase: increase the operating force.

3. When the vehicle is new, the wiring harness is easy to "extend". Please adjust it from time to time after the operation.

In order to use forklift safely in good condition, it is necessary to carry out regular spot inspection.

Use the forklift with fault or abnormal, which is the cause of the accident. Inspection and maintenance are often ignored. Finding problems as soon as possible and solving them in time will help to increase the working capacity of vehicles, improve production efficiency, prolong service life and bring more economic benefits.

In addition to some simple pre operation spot checks for refueling and cleaning filter elements, users are requested to carry out some complex spot checks and reconditioning in the maintenance factory designated by Yufeng. Special knowledge and special tools and equipment are needed for spot inspection and servicing, otherwise casualties are likely to occur.

The time described in this paper is calculated as 200 hours per month.

warning

Please read the safety section "spot inspection and repair" carefully before spot inspection and servicing.


Regular replacement of safety parts

In order to ensure the safety of operation, the importance of preventive maintenance is beyond doubt. In particular, the following parts must be replaced regularly, because they are important parts related to the safety of forklift operators, and such safety parts are easy to be damaged after using for a period of time, and it is difficult to determine whether they exceed the service limit by general maintenance.

The safety parts must be replaced with new ones before reaching the service limit, even if they are still intact in appearance.

Safety parts are not covered by the warranty.

In order to ensure the safety of operation, the importance of preventive maintenance is beyond doubt. In particular, the following parts must be replaced regularly, because they are important parts related to the safety of forklift operators, and such safety parts are easy to be damaged after using for a period of time, and it is difficult to determine whether they exceed the service limit by general maintenance. The safety parts must be replaced with new ones before reaching the service limit, even if they are still intact in appearance. Safety parts are not covered by the warranty.

 **remark**

Regular replacement of safety parts is different from troubleshooting, please let us know.

No.	Safety components	years
1	Brake master cylinder, wheel cylinder cup and dust boot, etc	1
2	Brake fluid tank hose	2~4
3	Steering axle cylinder dust boot	2
4	Lifting chain	2~4
5	High pressure pipe	1~2

1 week (50 hours) spot check

The following inspection items shall be added to the spot check before operation.

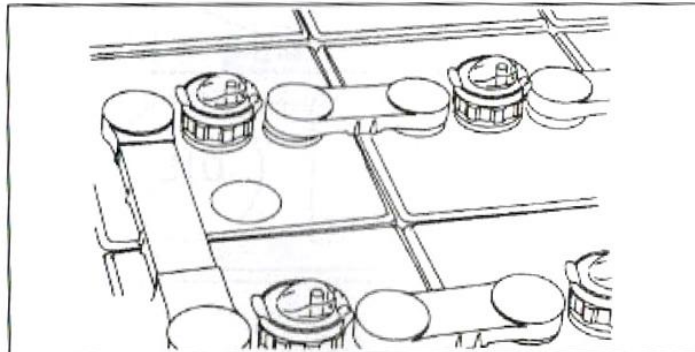
Before operation and one week spot check, the forklift truck with Yufeng battery should be centered on itself.

In order to operate safely and quickly, full spot check should be carried out.

Spot check project

Cleaning of storage battery

Determination and adjustment of specific gravity and night temperature of storage battery



■ Cleaning of storage battery

The upper and connecting parts of the battery shall be kept clean, dry and waterproof. The cover of the battery filling port must be closed tightly.

warning

Please clean with dry cloth or chemical fiber cloth. In order to prevent static electricity or explosion, please do not use wet cloth to clean.

One month (200 hours) spot check

On the basis of pre operation spot check and one week (50 hours) spot check, the following spot checks are added Project, one month spot inspection needs special technology and special tools, adjustment and replacement work are all More complicated.

Project

- The battery is charged equally
- The overflow cover of storage battery is damaged and loose
- Damage and discoloration of wiring
- Contact point of contactor
- Clean the controller and loosen the connection part
- Action of charger
- Whether the fuse is installed correctly and loose
- Oil leakage spot inspection of front axle
- loose point inspection of front axle mounting bolt (initial)
- Whether there are foreign matters in tire tread pattern
- spot inspection of deformation, cracking and damage of front axle and rear axle
- inspection for looseness of steering gear mounting bolts
- Inspection of piston rod and arm kingpin for sticking, loosening, deformation and damage
- spot inspection for installation status of steering axle
- The air in the brake pipeline is mixed
- The piston rod and cable of the braking system are moving, loose and stuck
- Inspection for damage, oil leakage, interference and looseness of brake piping
- point inspection of brake fluid leakage
- Inspection for looseness of brake drum installation position
- Inspection of fork cracking and deformation
- half bolt of portal frame (initial)

Project

- (wide view gantry) lifting cylinder fixing bolts, piston rod head bolts, oil cylinder U-bolts, guide block fixing bolts loose point inspection (initial)
- Inspection for cracking and damage of fork rack
- inspection for clamping of gantry roller, cracking and damage of roller shaft
- Inspection of lifting chain and fixed pin sticking point
- spot inspection, lubrication, left and right tension adjustment of lifting chain
- Pump action and oil leakage
- Valve action and oil leakage
- The valve control lever is stuck
- The action and damage of valve control lever are controlled by microcomputer
- Check the overflow valve and tilt self-locking function on the control valve
- Oil leakage of oil pressure piping
- The action, damage and seizure of chain wheel
- The movement, looseness, jamming and damage of the roller (main, side and roller group)
- Oil leakage due to action of oil cylinder (lifting and tilting)
- Abnormal and installation status of various accessories and parts
- fastening of main bolts and nuts of vehicle body (when new vehicle)
- Oil filling for all parts of vehicle body

■ Lifting chain lubrication

Lubricate the lifting chain with oil. Oil the chain pin shaft and the chain plate,

Note the following:

- 1) When the chain is loose.
- 2) After refueling, the gantry is operated up and down for more than 10 times.

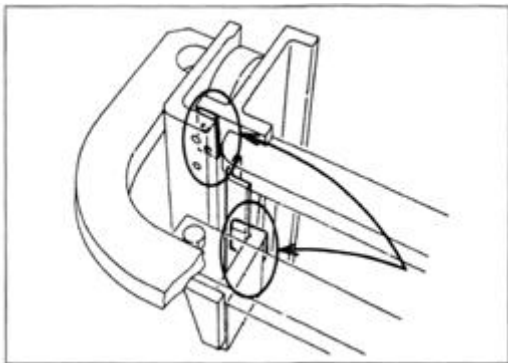
👉 remark

Especially in the port, near the coast, in order to prevent the erosion of salt, after typhoon, strong wind, wash with water, and then use the above method to lubricate.

■ buttering parts

Limit block at the rear of portal frame

Please grease the area indicated by the arrow



 **remark**

Do not mount the door frame, do not put your hands and feet on the connecting plate and in the door frame.
Accidental lifting of the gantry may cause injury.

3 months (600 hours) spot check

On the basis of the spot check before operation, one week (50 hours) and one month (200 hours), the following items are added.

Project

- Oil leakage of steering gear
- The steering gear mounting bolt is loose
- The gearbox leaks oil and the mounting bolts are loose
- Inspection for damage and wear of fork positioning pin shaft
- Motor (pump, drive, steering) brush wear
- motor (pump, drive, steering) terminal contacts

6 months (1200 hours) spot check

On the basis of pre operation point inspection, one week (50 hours) point inspection, one month (200 hours) point inspection and three months (600 hours) point inspection, the following point inspection items are added.

Project
<ul style="list-style-type: none">● Contact wear inspection and replacement of contactor● Cleaning of walking motor● insulation of electrical devices● Oil replacement of steering wheel gear box● Cleaning of oil suction filter in hydraulic oil tank● Replace the hydraulic oil● Replacement of return oil filter of hydraulic system● Adjustment of overflow pressure of relief valve● inspection for looseness of half bolt of portal frame● Adjustment of accelerator set screw● spot inspection of seat damage and loose mounting bolts● fastening of main bolts of vehicle body

1 year (2400 hours) spot check

Spot check before operation, 1 week (50 hours) and 1 month (200 hours)

On the basis of spot inspection, 3 months (600 hours) and 6 months (1200 hours) spot checks, the following items are added.

Project
<ul style="list-style-type: none"> ● Check the action, wear and damage of parking brake ● Change the brake fluid ● Check the action, oil leakage and damage of main pump and sub pump ● The piston cup and check valve of main pump and slave pump are updated ● Brake drum, brake shoe decomposition point inspection, adjustment, replacement ● spot inspection of wear and damage of Haff bushing of portal frame ● natural drop measurement of lifting cylinder ● natural forward tilt measurement of tilt cylinder ● Inspection of R part of fork ● Inspection for damage, crack deformation and bolt looseness of frame and connecting plate

Periodic spot check time benchmark

Spot check project		method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)	
position	content								
Electrical installation	battery	Surface cleaning	clean		○	○	○	○	○
		Electrolyte quantity	Spot check and supply	○	○	○	○	○	○
		proportion	Measurement and adjustment		○	○	○	○	○
		Equalizing charge				○	○	○	○
	controller	Surface cleaning	clean			○	○	○	○
		Contact ablation of contactor	Spot check			○	○	○	○
		Contact friction of contactor	Spot check					○	○
		Insulation part status	Spot check					○	○
		Loose connection	Spot check			○	○	○	○
	motor	Brush friction	Spot check				○	○	○
		Terminal ablation	Spot check				○	○	○
		action	Spot check				○	○	○
		extraordinary sound	Spot check				○	○	○
		Insulation status	determination				○	○	○
		clean	clean					○	○
charger	Action (light on)	Spot check			○	○	○	○	

This time is set under the standard operating time and operating conditions. When the operation time and working conditions change, spot check, adjustment and replacement should be carried out as soon as possible. ("●" means replenishment and replacement.)

Spot check items		Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)	
Spot check position	Spot check content								
Electrical installations	Wiring, terminal block, socket	Loose	Fastening	○	○	○	○	○	
		damage	Spot check	○	○	○	○	○	
		Discoloration	Spot check			○	○	○	
Power transmission	the front axle	Oil leakage	visual	○	○	○	○	○	
		Oil quantity	visual			○	● (First time only)	●	●
		Looseness of mounting bolts	Testing hammer			○	○	○	○
Running gear	tyre	Tire pressure	barometer	○	○	○	○	○	
		Tire cracking	visual	○	○	○	○	○	
		Tire tread depth	Depth gauge			○	○	○	
		Abnormal tire wear	visual	○	○	○	○	○	
		The tire is embedded with metal sheet Stone and other foreign matters	visual			○	○	○	○
	Installation of wheel hub and rim Install bolts and	Loose	Testing hammer	○	○	○	○	○	○
		damage	visual	○	○	○	○	○	○

	nuts								
	Rim circlip	Damage of clasp and brake plate	visual	○	○	○	○	○	○
	Bearing	Bearing stuck and abnormal sound	Tactile			○	○	○	○
		Decomposition of bearing and change of grease	exchange					●	●
	differential mechanism	Deformation, cracking and damage	visual			○	○	○	○
Operating device	Steering wheel	Free clearance	operation	○	○	○	○	○	○
		Axial seizure	Tactile	○	○	○	○	○	○

Spot check items		Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)
Spot check position	Spot check content							
Operating device	Steering wheel	Sticking in diameter direction	Tactile	○	○	○	○	○
		Smooth operation	operation	○	○	○	○	○
	Steering gear	Loose mounting bolts	operation			○	○	○
	Connecting rod, arm	Sticking and loosening	operation			○	○	○
		Deformation, damage and friction	visual			○	○	○
Knuckle	The kingpin is stuck and damaged	Tactile			○	○	○	

	Steering axle	Bending, deformation, cracking and damage	visual			○	○	○	○
		Installation status	Testing hammer			○	○	○	○
	Power steering	action	operation	○	○	○	○	○	○
		The dust boot is damaged	visual		○	○	○	○	○
		The mounting part and connecting part are stuck	visual			○	○	○	○
		Shaking and wear of ball joint	Tactile			○	○	○	○
brake rigging	brake pedal	Free clearance	operation	○	○	○	○	○	○
		Effective travel	ruler	○	○	○	○	○	○
		Brake effect, unilateral effect	operation	○	○	○	○	○	○
		Air is mixed into brake pipeline	operation			○	○	○	○
	Parking handle	Self locking, effective travel	operation	○	○	○	○	○	○
		Braking effect	operation	○	○	○	○	○	○
	Connecting rod, cable, etc	Correct action	operation			○	○	○	○
		The connecting part is loose and stuck	Tactile			○	○	○	○
	Hose, steel pipe	Damage, oil leakage, interference	visual			○	○	○	○
		Loose connection and pipe clamp	Tactile			○	○	○	○

Spot check items		Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)	
Spot check position	Spot check content								
system movement pretension Set up fork	Brake	Oil leakage	visual		○	○	○	○	
		Liquid volume	visual	○	○	○	○	●	
		Action of master pump and slave pump	operation					○	
		Oil leakage and damage of master pump and slave pump	visual					○	
		Master cylinder, piston cup and inspection valve Friction and damage	decompose					●	
	Brake drum and Brake shoe	Loose mounting part of brake drum	Testing hammer			○	○	○	○
		Brake shoe friction	calipers					○	
		Action state of shoe	operation					○	
		Rusty fixing pin	visual					○	
		Return spring return	ruler					○	
		Action of self adjusting mechanism	operation					○	
		Friction and damage of brake drum	visual					○	
	Brake plate	deformation	visual					○	
		crack	visual					○	
		Looseness of mounting part	Testing hammer					○	
fork	Damage, deformation and	visual	○	○	○	○	○		

heavy pretend Set up		friction							
		Damage and friction of fork locating pin	visual				○	○	○
		Cracking and friction of fork root and tip	visual			○	○	○	○
	Portal frame and Fork rack	Cracking and damage of the internal and external portal beams	visual			○	○	○	○
		Cracking and damage of the welding joint between the support of inclined oil cylinder and portal frame	visual			○	○	○	○

Spot check items		Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)	
Spot check position	Spot check content								
rise heavy pretend Set up	Gantry and fork frame	Welding part of inner and outer portal frame Cracking and damage	visual		○	○	○	○	
		The welding part of fork frame is cracked and damaged	visual		○	○	○	○	
		Roller stuck	Tactile			○	○	○	○
		Friction loss and damage of shaft lining of portal frame	visual						○
		The half bolt of portal frame is loose	Testing hammer			○ (初次)		○	○

	Roller, roller shaft and welding part Cracking and damage	visual			○	○	○	○
	Loosening of lifting cylinder head bolt, piston rod head bolt, U-bolt and upper guide block bolt of piston (wide view gantry)	Testing hammer		○ (first)			○	○
Chain and sprocket	Chain tension, deformation Damage and rust	Tactile	○	○	○	○	○	● (2-4 year)
	chain lubrication	visual			○	○	○	○
	Chain end joint and chain The connecting part is stuck	visual			○	○	○	○
	Sprocket deformation and damage	visual			○	○	○	○
	Sprocket bearing stuck	Tactile			○	○	○	○
Various accessories	Abnormality and status of various parts	Operation and visual inspection			○	○	○	○
Cylinder	Loose, deformed and damaged piston rod, piston rod thread and Earring	visual Testing hammer	○	○	○	○	○	○
	Oil cylinder action	Operation	○	○	○	○	○	○

Spot check items		Spot check position	Spot check content	Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)
Lifting gear	Cylinder	Oil leakage of oil cylinder	visual	○	○	○	○	○	○	○
		Friction and damage of pin shaft and bushing	visual			○	○	○	○	○
	Hydraulic pump	Oil leakage and abnormal sound	Visual and auditory	○	○	○	○	○	○	○
oil Pressure pretended Set up	Hydraulic oil tank	Oil quantity and dirt	visual	○	○	○	○	○	●	●
		Cleaning and removing foreign matters of oil suction filter	Operation						○	○
	Return oil filter	Oil filter clamp replacement	Operation						●	●
	Multi way valve operating lever	The operating lever is stuck	Tactile	○	○	○	○	○	○	○
		Joystick function	Operation	○	○	○	○	○	○	○
	Multi way valve	Oil leakage	visual	○	○	○	○	○	○	○
		Function of relief valve and inclined self-locking valve	Hearing				○	○	○	○
		Overflow pressure measurement	Oil pressure gauge						○	○
	Hose, piping Management card and activities Joint	Oil leakage, looseness, deformation and damage	Visual and tactile	○	○	○	○	○	○	○
		High pressure oil pipe	exchange							● (1-2 year)

security whole pretend Set up and his it	Roof guard and Block the shelf	The mounting part is loose	Testing hammer	○	○	○	○	○	○
		Deformation, cracking and damage	visual	○	○	○	○	○	○
	Direction indicator	Function and installation status	Operation	○	○	○	○	○	○
	Alarm device	Function and installation status	Operation	○	○	○	○	○	○
	Light installation	Function and installation status	Operation	○	○	○	○	○	○
	Reversing buzzer	Function and installation status	Operation	○	○	○	○	○	○
	Rearview mirror	Dirt and damage	visual	○	○	○	○	○	○
		Visual field state	visual	○	○	○	○	○	○
Instruments, etc	Instrument action	Operation	○	○	○	○	○	○	

Spot check items		Spot check method	Spot check before operation	1 week (50 hours)	1 month (200 hours)	3 months (600 hours)	6 months (1200 hours)	1 year (2400 hours)
Spot check position	Spot check content							
security whole pretend Set up and his	chair	Damage, loose mounting bolts	visual				○	○
	car body	Damage and cracking of car body and beam	visual					○
		Loosening of rivets and screws	Testing hammer					○
		Vehicle appearance of abnormal parts during	visual	○	○	○	○	○

it		vehicle inspection the day before yesterday							
		Refueling status of all parts of car body after cleaning	visual	○	○	○	○	○	○
	Add butter and	Investigation of oil change time	Grease gun			○	○	○	○
	Change the oil		investigation						○





5. Specifications and after sales service

Common faults and troubleshooting

This book has the following notes

In order to protect the safety of vehicle owners and operators, the precautions must be strictly observed.

Unless you have a good understanding of the vehicle, you must not carry out operation, spot inspection and maintenance.

Signal	mean
 danger	It is a symbol that can easily lead to death and injury accidents and must be observed
 warning	It refers to a symbol that can cause death or injury and must be observed.
 remark	It refers to a symbol that can cause death, injury, damage to vehicles and surrounding objects, and must be observed.
 note	A symbol that has nothing to do with accidents and malfunctions, but is expected to be familiar with in order to extend the service life of vehicles.

Common faults and troubleshooting

(1) Common faults and troubleshooting of hand and foot brake

Fault	Reason	Exclusion method
Poor braking	1、 Improper brake pedal position	adjustment
	2、 Oil leakage in brake system	Maintenance or replacement
	3、 There is air in the brake system	exhaust
	4、 Brake shoe clearance not adjusted properly	adjust
	5、 Deformation, damage or excessive wear of the cup of master cylinder and slave cylinder	Check the cause of damage and replace it
	6、 There is oil stain on the surface of brake drum hole	clear
Uneven braking	1、 There is oil stain on the surface of friction plate	Cleaning and replacement
	2、 Brake drum hole deviation, big and small holes are not concentric	Large aperture ensures roundness and concentricity
	3、 Brake shoe clearance not adjusted properly	adjust
	4、 Brake shoe return spring damaged	replace
	5、 Cylinder failure	Repair or replace
	6、 Failure of self regulating mechanism	Return spring deformation, repair, replacement
Brake noise	1、 The surface of friction plate is hardened or there are impurities	Replace
	2、 The bottom plate is deformed or the bolts are loose	Repair
	3、 Brake shoe deformation or incorrect installation	Repair or replace
	4、 Excessive wear of friction plate	replace
	5、 Hub shaft loose	replace
Other poor braking	1、 Brake overheating	Check for slippage
	2、 Impurities mixed into brake fluid	Check and replace the brake fluid

	3、 The hand brake position cable is deformed and the joint falls off	Repair or replace
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(2) Common faults and troubleshooting of steering system

Fault	Reason	Exclusion method
Steering problem	1、 There is air in the hydraulic line components of the steering system	exhaust
	2、 The oil level of working oil is too low and air is inhaled	Refueling and exhaust
	3、 The diverter valve hole is blocked and the valve core is stuck	Cleaning and replacement
	4、 The piston rod of steering cylinder is bent	Replace the piston rod
	5、 Knuckle and knuckle pin seizure	Inspection method: hold up the rear axle to see if the swing is flexible
	6、 The relative surface seizes during other steering	
	7、 Failure and blockage of steel ball in steering gear valve body	Removal and repair
	8、 Failure of steering gear reset and broken spring	Replace the spring leaf
	9、 The inner leakage of steering cylinder is too large	Check the piston sealing ring and replace it
	10、 The pressure of diverter valve is lower than the working pressure and the flow rate is too low	Adjust the pressure and flow
	11、 The oil viscosity is too high	Use the specified oil
	12、 The valve core and valve body are excessively worn and the clearance is too large	replace
	13、 Excessive wear of oil pump	replace
Oil leakage	1、 The joint is not pried tightly	Pry tightly

	2、 The joint surface between the stator and the rear cover of the steering gear valve body is dirty	clean
	3、 Oil cylinder leakage	Check the sealing of the sealing joint of the guide sleeve
Abnormal sound	1、 Low oil level in oil tank, hydraulic noise	Refueling and exhaust
	2、 The suction tank or oil filter is blocked	Clean replace

(2) Common faults and troubleshooting of hoisting system

Fault	Reason	Exclusion method
The lifting and descending are not smooth and loud	1. The clearance between the roller on the upper end of the outer gantry and the channel steel of the inner gantry is too large > 1mm	Reduce the adjusting gasket
	2. The clearance between the lower side roller of outer gantry and channel steel of inner gantry is larger than 1mm	Add adjusting gasket
	3. The clearance between the side roller of the fork rack and the channel steel of the inner gantry is too large > 1mm	Reduce the adjusting gasket
	4. Loose fastening bolts of roller shaft	Fastening
	5. Debris in channel steel of sliding frame and inner portal frame	Clear. Add oil to the track regularly
The fork frame is inclined	1. The left and right tire pressures are inconsistent	Make up air and air pressure are the same
	2. The tightness of the left and right chains is inconsistent	The tightness adjustment is consistent
	3. The speed limiting valve is blocked in the oil passage	Cleaning and replacement
	4. The oil inlet of lifting cylinder is partially blocked	Maintenance and cleaning

The left and right movements are not synchronized	1. The stroke of left and right lifting cylinders is inconsistent	Use the cylinder head to adjust 180 degrees
	2. The height of left and right cylinders is inconsistent	Adjust with the adjusting bolt on the oil cylinder
	3. The stroke of left and right cylinders is inconsistent, which exceeds the adjustment range of cylinder head	Add adjusting gasket on piston rod of lifting cylinder
The over lifting speed under full load fails to meet the specified requirements Or it can't be lifted	1. Insufficient working oil	Add oil
	2. Throttle hole of speed limiting valve blocked by dirt	Dismantling and washing
	3. The safety valve is blocked and jammed	Cleaning and repairing
	4. There is air leakage in the welding seam of the oil suction pipe at the filter screen in the oil tank	Repair welding and bottom leakage
	5. Loose pipe joint	Pry tightly
	6. The oil pump gear and pump body are excessively worn and the clearance is too large	Check the cleanliness of the oil, grade 9-11 is required
	7. The inner sealing ring of lifting cylinder is damaged or excessively worn, and there is too much internal leakage	Replace the sealing ring
	8. The clearance between valve body and spool valve core is too large and the pressure of main valve is too low	Replacement and adjustment
	9. The diverter valve is not shunted properly	adjustment

(2) Common faults and troubleshooting of electrical system

Keyless on voltage	<ol style="list-style-type: none"> 1. Poor contact of key switch 2. Broken wire 3. Poor contact of connector 4. Loose battery connector
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Step on the accelerator pedal and the forklift can't go	<ol style="list-style-type: none"> 1. Broken wire 2. Poor contact of connector 3. Poor contact of direction switch 4. Failure of silicon controlled rectifier
Lifting motor does not rotate	<ol style="list-style-type: none"> 1. Open circuit or open circuit of contactor coil 2. The lifting switch is not working properly 3. Broken wire 4. Poor contact of connector 5. The main contact of contactor is burnt out
Long rotation of lifting motor	<ol style="list-style-type: none"> 1. The lifting switch is not working properly
The lamp is not working properly	<ol style="list-style-type: none"> 1. Broken fuse 2. Poor contact of connector 3. The bulb is broken
The horn doesn't sound	<ol style="list-style-type: none"> 1. Poor contact of connector 2. Poor contact of horn switch 3. The horn is broken
The horn blared	<ol style="list-style-type: none"> 1. Horn switch contacts Changtong
The reversing buzzer doesn't sound	<ol style="list-style-type: none"> 1. The buzzer is broken 2. Poor contact of reversing switch 3. Poor wiring connection

(2) Causes and troubleshooting of gearbox

Failure items	Causes and troubleshooting
Efficiency decline	1. The friction plate is stuck or worn. Check the friction plate for binding, uneven contact or
	2. The bearing is damaged. Replace the bearing.
	3. Check whether the lubricating oil circuit is blocked.

Oil leakage	1. The sealing gasket is damaged. Replace the gasket.
	2. Aging or damage of rubber parts. Replace parts.
	3. Parts are damaged and cracked. Replace.

(2) Causes and troubleshooting of multi way valve

Fault phenomenon	Cause of failure	Exclusion method
External oil leakage	<ol style="list-style-type: none"> 1. The lip seal is worn 2. The sealing part of valve rod is damaged 3. Foreign matters such as paint and dust are embedded in the sealing part of lip 4. O-ring is damaged (cut ring) 5. Aging and deformation of sealing ring between valve plates 6. There are scratches (new valve) or foreign matters on the sealing surface of valve plate 7. Valve body hole and seal ring groove hole are not concentric (new valve) 8. The oil return back pressure exceeds the allowable value 9. The bolts between plates are not evenly stressed or not tightened 	<ol style="list-style-type: none"> 1. Replace the sealing ring 2. Replace the valve stem or valve disc assembly 3. Clean the paint and other foreign matters embedded in the sealing part of the lip, and pay attention not to damage the valve stem and sealing surface 4. Replace the O-ring 5. Replace the sealing ring with a new one 6. Remove foreign matters or replace valve plate 7. Replace the valve plate 8. Check the circuit and reduce the pressure of return oil to the specified value 9. Tighten the stud bolts to the specified torque
The stem cannot be reset	<ol style="list-style-type: none"> 1. The control mechanism is not flexible 2. The valve rod is jammed by dirt 3. The return spring is deformed or broken 4. The valve rod is deformed by external force 5. The mounting surface is uneven and the valve body is deformed, resulting in valve sticking 	<ol style="list-style-type: none"> 1. Check the control rod 2. Clean valve, oil tank and pipeline 3. Remove the back cover to check and replace the spring 4. Re match the valve stem or replace the valve sub assembly 5. Plane adjustment

Weight drop of valve stem in neutral position (leakage in neutral position of valve exceeds tolerance)	<ol style="list-style-type: none"> 1. The valve rod and valve hole are worn, the gap is increased, and the internal leakage is serious 2. The valve rod or valve hole is scratched and the internal leakage is increased 3. The valve rod does not return to the neutral position 4. Overload valve or overload valve plug and valve body seal is not tight 5. Serious internal leakage of oil cylinder 6. The groove size of valve body is out of tolerance, and the sealing oil length becomes smaller 	<ol style="list-style-type: none"> 1. Reassemble the valve rod 2. Reassemble the valve stem or replace the valve sub assembly 3. Check the reversing mechanism 4. Check whether the O-ring is cut. If it is damaged, replace it with a new one 5. Check whether the oil cylinder piston seal is damaged 6. Replace the valve plate
Turning heavy	<ol style="list-style-type: none"> 1. The oil is not clean, and the shunt valve core or safety valve core is stuck by foreign matters 2. The opening and closing characteristics of the shunt safety valve are not good or the pressure regulation of the shunt safety valve is low 3. Insufficient oil pump flow 4. Steering gear failure 	<ol style="list-style-type: none"> 1. Clean the diverter valve core or shunt safety valve core, oil tank and pipeline 2. replace the diverter relief valve or readjust the diverter relief valve pressure 3. Check why the oil supply system of oil pump is insufficient 4. Replace the steering gear
No action of oil cylinder (low pressure or no pressure)	<ol style="list-style-type: none"> 1. There are foreign matters stuck between the main valve core and valve seat of overflow valve or overload valve 2. The damping hole is blocked 3. Abnormal wear of cone valve core 4. The pressure regulating spring is deformed 5. The adjusting screw of relief valve is loose 6. Oil pump failure 	<ol style="list-style-type: none"> 1. Clean valve, oil tank, pipeline, etc 2. The hydraulic oil is seriously polluted. Clean the hydraulic system 3. Check the wear and replace the relief valve assembly 4. Check the spring quality 5. After re adjusting the pressure, tighten the nut according to the specified torque 6. Replace the oil pump
Vibration of relief valve Motion and noise	<ol style="list-style-type: none"> 1. There is air in the hydraulic system 2. The oil pump sucks in air 3. The resistance of the oil suction pipeline is too large or the suction side of the oil pump produces negative pressure 4. The oil suction filter is blocked 5. There is a pressure point vibration and noise in the relief valve 	<ol style="list-style-type: none"> 1. The system will be discharged after repeated operation 2. Check the oil pump suction test 3. Check the cause of negative pressure 4. Clean the oil filter and filter the oil 5. Adjust the relief valve and slightly raise or lower the pressure gauge by 1-2 scales

No self-locking of forward tilt or excessive self-locking of forward tilt	1. The oil is not clean, causing the small valve core of forward tilt control to be stuck 2. Connect the wrong oil port	1. Clean valve, oil tank, pipeline, etc 2. Switch over the wrong oil port
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(2) Causes and troubleshooting of gear pump

Fault phenomenon	Cause of failure	Exclusion method
The pump can't pump oil Or oil absorption is not smooth	1. The overflow area of oil suction filter is small or blocked by foreign matters 2. The oil tank level is too low 3. The installation position of oil pump is too high; the suction head exceeds the specification 4. The oil temperature is too low and the oil viscosity is too high 5. The oil suction pipe is too thin or too long, and the resistance is too large 6. Oil seal of oil pump is damaged and air is inhaled 7. The rotation direction of oil pump is not correct or the speed is too high 8. Air leakage at oil suction side	1. Replace the oil filter with appropriate flow area or clean the blocked oil filter 2. Fill the oil tank with hydraulic oil as required 3. According to the oil pump's suction range, it should be within 500mm 4. Change the proper oil or heat the oil according to the season 5. Replace the large diameter oil pipe and shorten the length of the oil suction pipe 6. Replace the oil seal 7. Change the rotation direction of the oil pump to make the speed reach the specified value 8. Check the oil absorption part and its seal, and replace the invalid seal
Discharge side of pump No oil	1. If not, the pump is damaged The relief valve is damaged or stuck by stolen goods, and the oil flows back to the tank from the relief valve	1. Check and repair the pump or replace it with a new one 2. Check and repair the relief valve or replace the relief valve, filter the oil or replace the oil

<p>The oil is discharged from the oil outlet of the oil pump, but the pressure cannot be increased</p>	<ol style="list-style-type: none"> 1. The side plate of oil pump is seriously worn and the volumetric efficiency is too low 2. The cone valve core of relief valve is seriously worn 3. The overflow valve is blocked by stolen goods and is not closed tightly 4. The pressure regulation of relief valve is too low 5. The oil suction port sucks in air 	<ol style="list-style-type: none"> 1. Repair or replace oil pump 2. Replace the cone valve core with a new one 3. Filter the oil and remove the dirt 4. Adjust the relief valve to the specified value 5. Check whether the sealing ring at the oil suction port is damaged
<p>Oil pump volume Low efficiency</p>	<ol style="list-style-type: none"> 1. The inner seal of oil pump is damaged 2. Wear of side plate 3. There is dirt in the oil pump or the clearance is too large 4. The speed of oil pump is too low or too high 5. There is negative pressure in the oil tank 	<ol style="list-style-type: none"> 1. Replace the sealing ring 2. Replace the side plate 3. Remove the stolen goods and filter the oil; replace the oil pump with a new one 4. Make the oil pump run within the specified speed range 5. Increase the capacity of air filter
<p>Noise from oil pump</p>	<ol style="list-style-type: none"> 1. Most of the cases are caused by insufficient oil absorption of the oil pump, such as blockage of the oil suction filter, low oil level, air intake at the oil seal, etc 2. The oil return pipe is higher than the oil level and there are a lot of bubbles in the oil 3. The viscosity of the oil is too high and the oil temperature is too low 4. The coaxiality between oil pump shaft and prime mover shaft is too large 5. After maintenance, the driven gear is inverted, and the meshing area becomes smaller 	<ol style="list-style-type: none"> 1. Keep the oil level high and the sealing must be reliable to prevent oil pollution 2. Immerse the oil return pipe below the oil level 3. Select oil with proper viscosity according to season, or heat it up 4. Adjust the coaxiality of the two shafts 5. Disassemble the oil pump and turn the driven gear
<p>High temperature rise of oil pump</p>	<ol style="list-style-type: none"> 1. The pressure is too high, the rotating speed is too fast, and the side plate is burnt 2. The oil viscosity is too high or the internal leakage is 	<ol style="list-style-type: none"> 1. Adjust the relief valve properly; reduce the speed to the specified value; repair the oil pump 2. Change the proper oil and check the seal

	serious 3. The oil return back pressure is too high 4. The fuel tank is too small and has poor heat dissipation	3. Eliminate the cause of high oil return back pressure 4. Increase the fuel tank
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(8) Other common faults and troubleshooting

Fault phenomenon	Cause of failure	Exclusion method
There is abnormal sound in the exercise	There is abnormal sound in the exercise	Refuel to the specified requirements
	2. The front and rear hub bearings are loose and cracked	After tightening the bearing and locking nut, the wheel hub should be able to rotate freely after returning
	3. Gearbox, gear and friction plate are damaged	to update
	4. Differential and spider damaged	to update
	5. Loose fasteners	Pry tightly

SME controller fault code table

If the vehicle controller reports running or lifting fault, the corresponding fault can be found according to the fault code. The fault code can be viewed from the instrument cluster.

Fault list

Code	Fault	Grade	Possible causes	Set status	Erase status
1	Over Voltage	prevent	Battery internal resistance is too high Battery open circuit	The key switch voltage or capacitor voltage of the controller exceeds the maximum allowable level	Set the keyswitch voltage below the overvoltage limit and restart the keyswitch
2	Under Voltage	prevent	The battery is seriously damaged or dead Battery internal resistance is too high Battery disconnected while driving External load consumes battery power	The key switch voltage is lower than the minimum allowable voltage of the controller	Set the keyswitch voltage below the overvoltage limit and restart the keyswitch
3	User Over Voltage	prevent	Battery internal resistance is too high Battery open circuit User defined voltage value too low	The keyswitch voltage is higher than the maximum value set by the user	Set the keyswitch voltage below the overvoltage limit and restart the keyswitch

4	User Under Voltage	prevent	Battery seriously damaged or low Battery internal resistance is too high Battery disconnected while driving Key switch fuse blown External load consumes battery power User defined voltage too high	Battery seriously damaged or low Battery internal resistance is too high Battery disconnected while driving Key switch fuse blown External load consumes battery power User defined voltage too high	Set the keyswitch voltage below the overvoltage limit and restart the keyswitch
5	Inverter 1 Over Current	prevent	External or internal two-phase short circuit between AC motor U1, V1 or W1 The parameter of motor 1 is incorrect The power module of inverter 1 is damaged	The phase current of inverter 1 exceeds the limit value	Restart the key switch
6	Inverter 2 Over Current	prevent	External or internal two-phase short circuit between AC motor U2, V2 or W2 Motor 2 parameter incorrect The power module of inverter 2 is damaged	The phase current of inverter 2 exceeds the limit value	Restart the key switch

8	Inverter 1 Over Temperature	prevent	Operating environment temperature is too high Overload operation The radiator of the controller is installed incorrectly The cooling system of the controller is not working properly	The temperature of inverter 1 power module is higher than 100 °C	Make the temperature of power module of inverter 1 lower than 100 °C and cycle the key switch
9	Inverter 2 Over Temperature	prevent	Operating environment temperature is too high Overload operation The radiator of the controller is installed incorrectly The cooling system of the controller is not working properly	The temperature of inverter 2 power module is higher than 100 °C	Make the temperature of power module of inverter 2 lower than 100 °C and restart the key switch
10	Inverter1 High Temperature	limit	Operating environment temperature is too high Overload operation The radiator of the controller is installed incorrectly The cooling system of the controller is not working properly	The temperature of inverter 2 power module is higher than 80 °C	Make the temperature of power module of inverter 1 lower than 80 °C

11	Inverter 2 High Temperature	limit	<p>Operating environment temperature is too high</p> <p>Overload operation</p> <p>The radiator of the controller is installed incorrectly</p> <p>The cooling system of the controller is not working properly</p>	The temperature of inverter 2 power module is higher than 80 °C	Make the temperature of power module of inverter 2 lower than 80 °C
12	Inverter 1 Under Temperature	prevent	The operating environment temperature is too low	The temperature of power module of inverter 1 is lower than -40 °C	Make the temperature of power module of inverter 1 higher than -40 °C and restart the key switch
13	Inverter 2 Under Temperature	prevent	The operating environment temperature is too low	The temperature of inverter 2 power module is lower than -40 °C	Make the temperature of power module of inverter 1 higher than -40 °C and restart the key switch
14	Inverter 1 Current Sensor Fault	prevent	<p>Leakage current caused by stator short circuit of motor 1</p> <p>Sensor failure of controller</p>	Inverter 1 current sensor reading invalid at critical position	Restart the key switch

15	Inverter 2 Current Sensor Fault	prevent	Leakage current caused by short circuit of motor 2 stator Sensor failure of controller	The current sensor of inverter 2 has invalid reading at critical position	Restart the key switch
17	Inverter 1 Temp Sensor Fault	stop	Inverter 1 internal temperature sensor not connected or short circuited	The temperature difference between inverter 1 and microprocessor is greater than 70 °C	Restart the key switch
18	Inverter 2 Temp Sensor Fault	stop	Inverter 2 internal temperature sensor not connected or short circuited	The temperature difference between inverter 2 and microprocessor is greater than 70 °C	Restart the key switch
19	Motor 1 Over Temperature	stop	Motor 1 over temperature Wrong thermal probe type or input for motor 1 The thermal probe of motor 1 is not connected or the input is short circuited	The temperature of motor 1 is higher than the set value of motor temperature parameter	Make the temperature of motor 1 lower than the set value of temperature parameter and restart the key switch
20	Motor 2 Over Temperature	stop	Motor 2 over temperature Wrong thermal probe type or input for motor 2 The thermal probe of motor 2 is not connected or the input is short circuited	The temperature of motor 2 is higher than the set value of motor temperature parameter	Make the temperature of motor 2 lower than the set value of temperature parameter and restart the key switch

21	Motor 1 High Temperature	limit	Motor 1 over temperature Wrong thermal probe type or input for motor 1 The thermal probe of motor 1 is not connected or the input is short circuited	The temperature of motor 1 is higher than the set value of temperature parameter of motor start-up subtraction	Make the temperature of motor 1 lower than the temperature of motor start-up and reset the key switch
22	Motor 2 High Temperature	limit	Motor 2 over temperature Wrong thermal probe type or input for motor 2 The thermal probe of motor 2 is not connected or the input is short circuited	The temperature of motor 2 is higher than the set value of temperature parameter for motor start-up subtraction	Make the temperature of motor 2 lower than the temperature of motor start and reduce and restart the key switch
21	Motor 1 Temp Sensor Fault	limit	The temperature sensor of motor 1 reads the value that is not allowed	The value of the temperature sensor of motor 1 is out of the allowable range	Check the temperature sensor of motor 1 and restart the key switch
22	Motor 2 Temp Sensor Faul	limit	The temperature sensor of motor 2 reads the value that is not allowed	The value of the temperature sensor of motor 2 is out of the allowable range	Check the temperature sensor of motor 2 and restart the key switch
17	Microprocessor Over Temperature	stop	Microprocessor failure Microprocessor temperature sensor failure	The temperature of microprocessor is higher than 125 °C	Restart the key switch
28	+5V Supply Failure	prevent	External load impedance +5V output voltage too low	The + 5V power supply is outside the range of + 5V ± 10%	Remove all external loads, make the + 5V power supply within the allowable range and switch the key again

29	+12V Supply Failure	prevent	External load impedance +12V output voltage too low	The + 12V power supply is beyond + 12V ± 10%	Remove all external loads, keep the + 12V power supply within the allowable range and restart the key switch
30	Encoder 1 Fault	prevent	Motor encoder 1 fault Encoder wiring fault of motor 1 The speed of motor 1 changes too fast Electromagnetic noise interferes with the sensor of motor 1	The difference between the two consecutive speed values read by the encoder exceeds the rated limit	Restart the key switch
31	Encoder 2 Fault	prevent	Motor encoder 1 fault Encoder wiring fault of motor 1 The speed of motor 1 changes very fast Electromagnetic noise interferes with the sensor of motor 2	The difference between the two consecutive speed values read by the encoder exceeds the rated limit	Restart the key switch
32	Driver Output 1 Open/Short	prevent	Drive output 1 load open or short circuit Drive output 1 damaged	Drive output 1 open or short circuit	Correct the open or short circuit of drive output 1 load and restart the key switch. When the fault is the current no load connection, replace the controller
33	Driver Output 2 Open/Short	prevent	Drive output 2 load open or short circuit Drive output 2 damaged	Drive output 2 open or short circuit	Correct the open or short circuit of drive output 2 load and restart the keyswitch. When the fault is the current no load connection, replace the controller

34	Driver Output 3 Open/Short	prevent	Drive output 3 load open or short circuit Drive output 3 damaged	Drive output 3 open or short circuit	Correct the open or short circuit of drive output 3 load and restart the key switch. When the fault is the current no load connection, replace the controller
35	Digital Output 1 Open/Short	prevent	Digital output 1 load open or short circuit Digital output 1 damaged	Digital output 1 open or short circuit	Correct the open or short circuit of digital output 1 load and restart the key switch. When the fault is the current no load connection, replace the controller
36	Digital Output 2 Open/Short	prevent	Digital output 2 load open or short circuit Digital output 2 damaged	Digital output 2 open or short circuit	Correct the open or short circuit of digital output 2 load and restart the key switch. When the fault is the current no load connection, replace the controller
37	EEPROM Failure	prevent	EEPROM memory read / write failure	EEPROM memory read / write error	Restart the key switch
38	EEPROM Corrupted	prevent	Software version or parameter error	Memory CRC mismatch	Download the correct software or restore the default parameters
40	Precharge Circuit Fault	prevent	Precharge circuit failure Capacitor + B and - B short circuit Power module short circuit	Capacitor voltage is zero when precharge is too fast or pre charged	Restart the key switch

41	Precharge Failed	prevent	The external load is capacitor Precharge circuit failure	Charging capacitor pre charging stage failure before keyswitch voltage	Restart the key switch
42	Main Contactor Welded	prevent	Leakage welding due to electric shock of line contactor Phase loss of motor The external circuit supplies voltage to the capacitor	The load capacitor will not discharge for a short time before closing the main contactor	Restart the key switch
43	Main Contactor Did Not Close	prevent	The main contactor is not closed after the contactor is driven Main contactor coil disconnected +B fuse is blown	The identification difference between the key switch and the capacitor is too large after the contactor is powered on	Restart the key switch
44	Interlock Disabled	stop	Interlock input not active	Interlock input not active Controller line disconnected	Activate interlock input
45	Static Return To Off Traction	warning	After emergency twist or stop control program, traction throttle or direction selector is activated on key	After electromagnetic interference or stop control program, one or more traction inputs are activated on the key	Cancel all traction inputs
46	Static Return To Off Hydraulic	warning	After stopping the control program, the hydraulic throttle valve and auxiliary input are activated on the key	After stopping the control program, one or more hydraulic inputs are activated on the key	Cancel all hydraulic inputs

47	Traction Throttle Fault	stop	Traction throttle valve wiring (analog / digital) not connected	Error condition detected for traction throttle valve Check throttle type documentation	Restart the key switch
48	Hydraulic Throttle Fault	stop	Hydraulic throttle valve wiring (analog / digital) not connected	Error condition detected for hydraulic throttle valve Check throttle type documentation	Restart the key switch
49	Brake Throttle Fault	stop	Brake throttle valve wiring (analog / digital) not connected	Brake throttle error condition detected Check throttle type documentation	Restart the key switch
50	Service Time Expired	warning	Service interval expired	Service timer expired	Reset service timer
51	Low Battery State Of Charge	limit	Battery charge below set value	The battery level is expected to be below the minimum set point	Reset the parameters to make the power higher than the set value. Restart the key switch
52	Wrong Parameter	prevent	Parameter setting input value error	The set parameter value is outside the allowable range	Make the parameters in the correct range Restart the key switch
53	Restart Required	warning	After modifying the parameters, restart the controller to take effect	Change parameter settings	Restart the key switch

54	CAN Bus Off	stop	The L channel and H channel are short circuited, or the ground wire of H channel and can communication is short circuited Cable routing error Baud rate configuration error for one node	Detect bus off status	Restart the key switch
55	CAN Open Circuit	stop	H or / and I channels are not connected Cable routing error Other nodes on the network are not powered	Message not received	Restart the key switch
56	CAN Bad Wiring	prevent	Cable routing error The ground wires of L channel and can communication are exchanged	Can bus synchronization phase error	Restart the key switch
57	CAN Fault On Bootup	prevent	The supply of one or more devices connected to the bus is interrupted	After entering operation mode, the bus slave receives more than one start signal from the master	Restart the key switch
58	CAN Fault On Start	prevent	Communication protocol mismatch Loss of communication	After entering the operation mode, the main equipment changes the operation state	Restart the key switch

59	CAN Fault On Operational	prevent	One or more devices are not in operation mode after startup	The main device is not in operation mode	Restart the key switch
60	CAN fault On Heartbeat	prevent	One or more devices did not send heartbeat messages Loss of communication	No heartbeat message was received	Restart the key switch
61	CAN fault On RPDO	prevent	Communication does not exist	At least one interface was not received	Restart the key switch
62	Net Timeout Heartbeat	stop	Temporary loss of communication	Heartbeat did not receive a timeout set up by the user via can settings	Restart the key switch
63	Net Timeout RPDO	stop	Temporary loss of communication	At least one pod did not receive a timeout established by the user via can settings	Restart the key switch
64	CAN Slave Precharge Done Timeout	stop	5 seconds after the end of precharge, the main equipment power cord is not ready	The precharge timer timed out before the master device sent the power preparation request	Restart the key switch
65	CAN Slave Fault From Master	stop	The master requires an incorrect condition	Received an error request from the master	Restart the key switch

66	CAN Master Timeout	stop	Network synchronization failed	Some nodes may not exist in the network	Check all nodes connected and restart the keyswitch
67	Net Startup Timeout	prevent	Network synchronization failed at startup	The node itself is not synchronized to the network	Correct network startup parameters are required Restart the key switch
68	Net External Failure	stop	Loss of network synchronization	At least one node becomes inoperable	Restart the key switch
69	Net Mains Manager Wrong Sequence	prevent	In tau node, auxiliary or following main contactor management, power supply sequence signal is wrong	The main contactor manager executed a wrong drive sequence	Restart the key switch
70	Net Mains Manager Precharge Too Slow	prevent	In tau node, the signal of auxiliary management and precharge phase of main contactor is too slow	DC bus voltage will not increase after discharge	Restart the key switch
71	Net Mains Manager Closing Too Slow	prevent	In tau node, the signal of auxiliary management and total closing stage of main contactor is too slow	Main contactor does not close	Check the controller control cable Restart the key switch
72	Net Mains Manager Powering Alarm	prevent	In tau node, the main contactor is used for auxiliary management, and there is an alarm signal when the power supply is in state	At least one failure has occurred on the primary contact manager	Restart the key switch

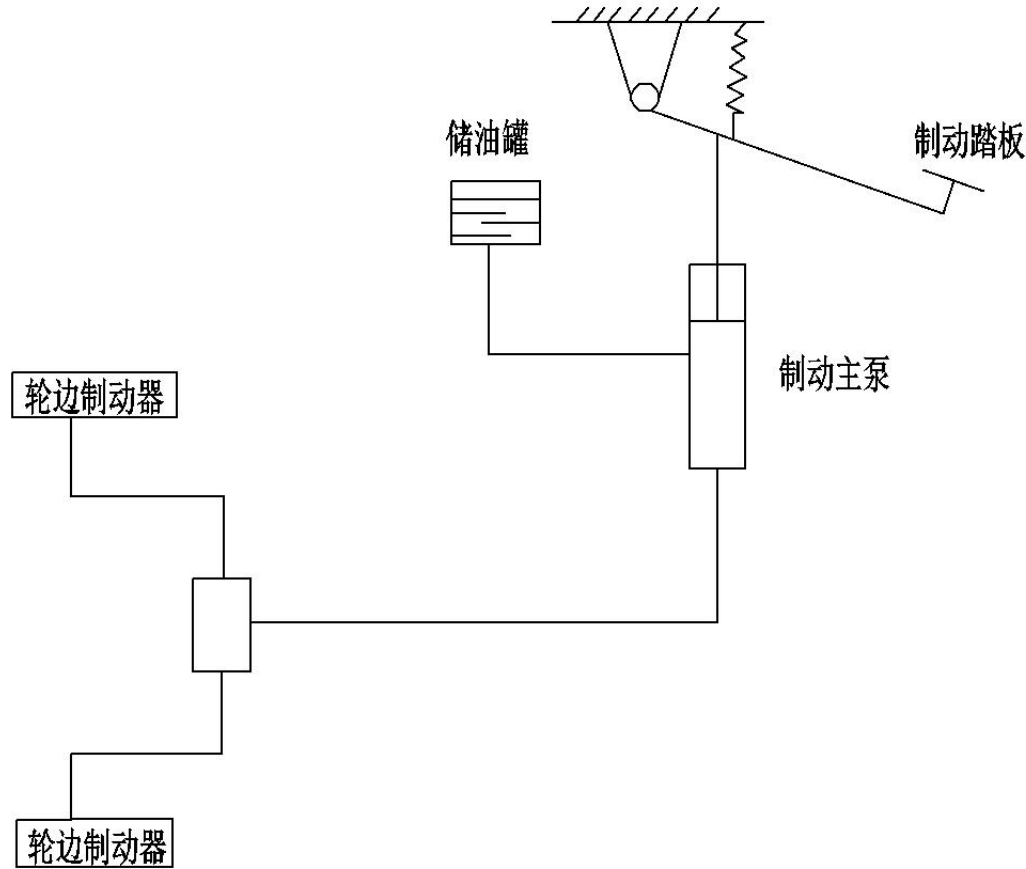
73	CO Synchro Failed	prevent	Network out of sync	Network configuration error or shutdown for at least one node	Check that all nodes are turned on and ensure that the configuration is correct before restarting the key switch
74	CO Synchro Lost	stop	Loss of network synchronization	At least one network node was incorrectly configured or shut down during operation	Before restarting the keyswitch, check that all nodes are provided with the correct network configuration
75	Stopped For System Fault	stop	Node stop system failure	The node stops due to a stop or block fault on another node	Reset the system stop fault or verify the configuration corresponding to the system failure Restart the key switch
76	Blocked For System Fault	prevent	Node blocking system failure	The node stops due to a stop or block fault on another node	Reset the system stop fault or verify the configuration corresponding to the system failure Restart the key switch
77	BMS Wall Charge	prevent	BMS is a rechargeable battery	The tau node sets a blocking fault	Restart the key switch
78	BMS Stop	stop	BMS requires the system to stop	The tau node sets a stop fault	Restart the key switch
79	BMS Fault	prevent	BMS fault status signal	The tau node sets a blocking fault	Restart the key switch
80	BMS Limiting	limit	BMS required current limit	Limit current value of tau node	Restart the key switch

81	Steering Sensor Fault	limit	Steering sensor wiring (analog / digital) not connected	A steering sensor fault has been detected View steering sensor type file	Restart the key switch
100	Internal Software Fault 1	prevent	Internal software error	internal error	Recover memory error and restart key switch
101	Internal Software Fault 2	warning	Internal software error	internal error	Recover memory error and restart key switch
102	Internal Software Fault 3	warning	Internal software error	internal error	Recover memory error and restart key switch
103	Internal Hardware Fault 1	prevent	Internal hardware error	internal error	Restart the key switch
104	Internal Hardware Fault 2	prevent	Internal hardware error	internal error	Restart the key switch

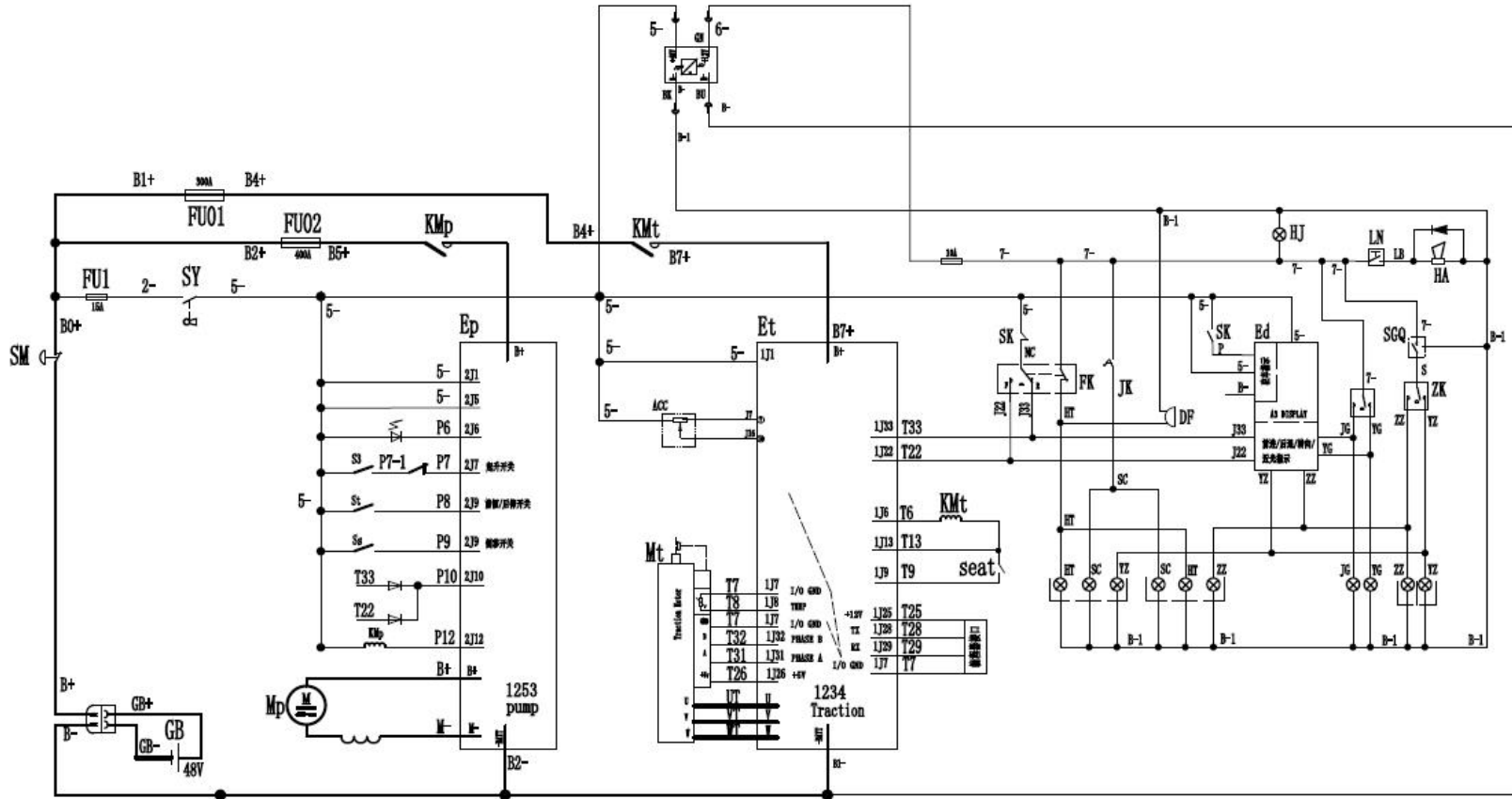
6. Main control schematic diagram

Brake schematic diagram.....	120
Electrical schematic diagram.....	121
Hydraulic schematic diagram.....	123

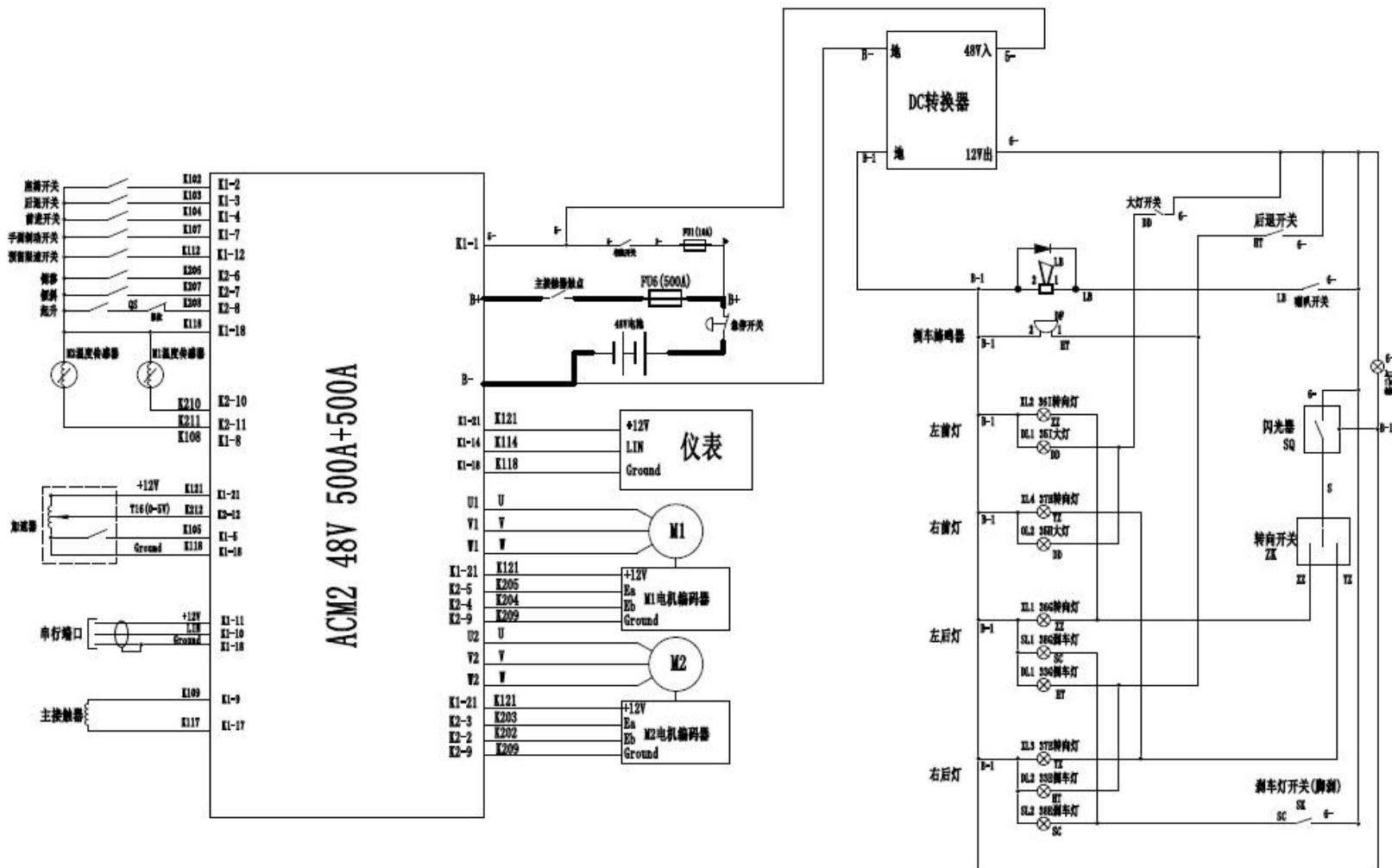
Brake schematic diagram



Electrical schematic diagram

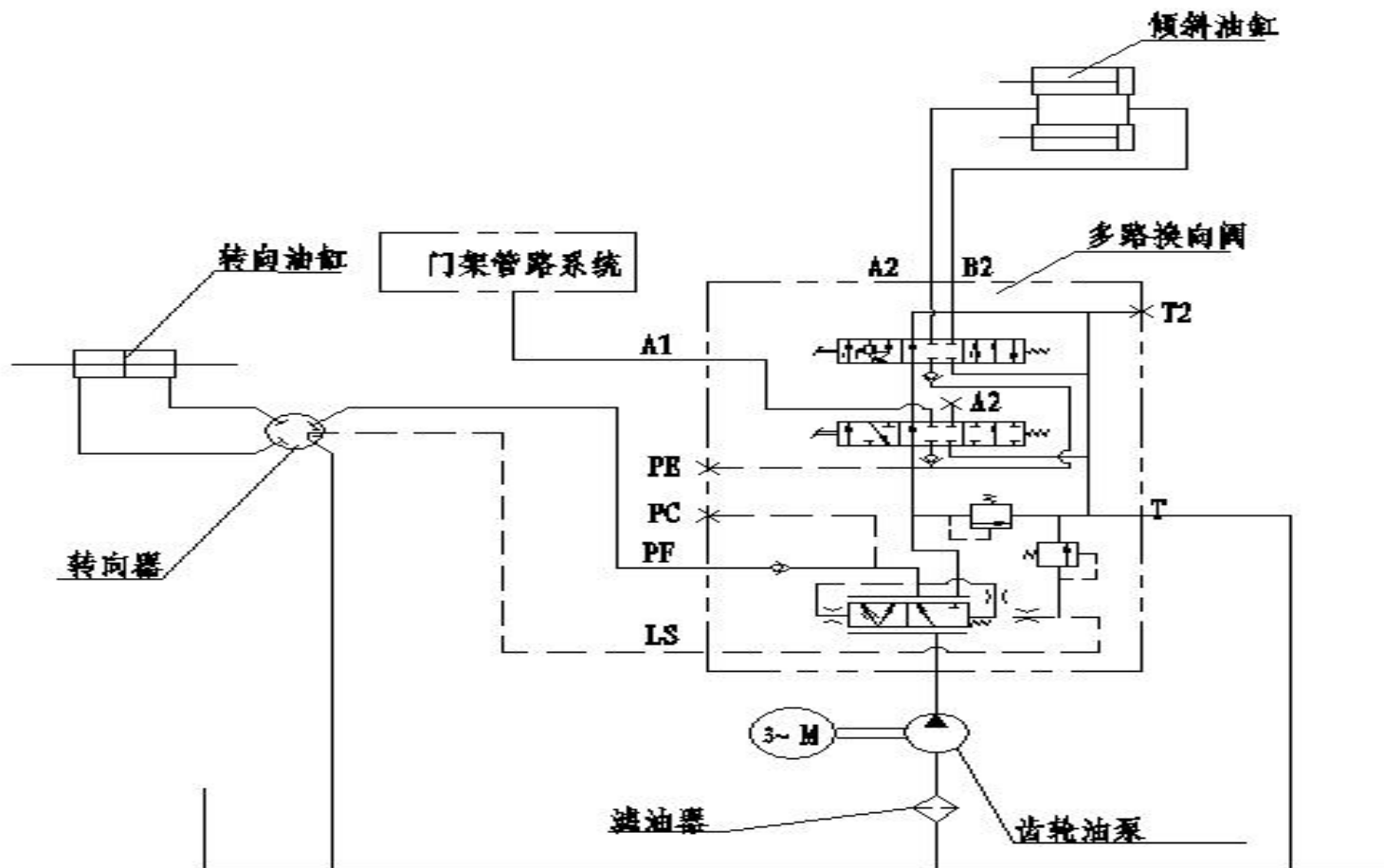


1.5T、2.0T Counterbalanced weight schematic diagram

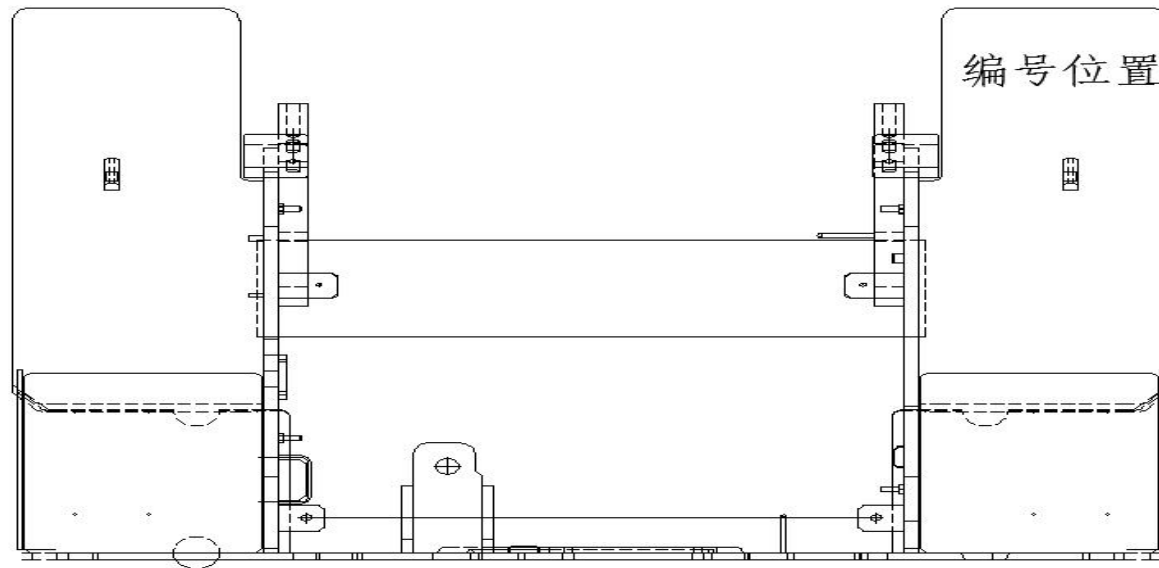


2.5T、3.0T Counterbalanced weight schematic diagram

Hydraulic schematic diagram



Frame number



The frame number is engraved on the front right side of the vehicle

EFORK original accessories

No matter how good the accessories are, they will wear and deteriorate naturally after a long time of use.



In order to fully repair, please use the same original parts of Yufeng as the newly loaded parts.
Please buy the original accessories of Yufeng.

Forklift archives

Vehicle form _____
Vehicle manufacturing number _____
Forklift weight _____
Maximum load capacity _____
Form of portal frame _____
Gantry manufacturing number _____
Key number _____
Vehicle management number _____
Vehicle Manager _____
Accessories _____
Operation license numberNo. _____
Delivery date _____
Date of vehicle purchase _____
Designated maintenance plant _____

Designated maintenance plant telephone number _____